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Abstract

This study analyzes the educational attainment and early labor market outcomes of young migrants from the Former Soviet Union (FSU) who arrived in Germany between 1989 and 1994. The results reveal that migrants have lower educational attainments than natives, and that within the group of migrants, Jewish migrants perform better than ethnic German migrants. A decomposition analysis reveals that this competitive edge can, for the most part, be explained by a higher socioeconomic background. In the labor market, migrants cannot compensate for their educational disadvantage and have poorer labor market outcomes than natives. The results of this study stress the importance of an early educational integration of migrants for a successful labor market integration in the long run.

JEL Classification: F22, I20, J30, J60, J62

Keywords: International migration; education; wages; unemployment; intergenerational mobility; integration

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1 Introduction

The large and further growing migrant population in Germany makes the successful integration of migrants and their descendants a matter of social and economic importance – in particular in the light of demographic change and growing shortage of skilled labor in some industries (Bundesagentur für Arbeit, 2011). But while the public attention is mainly concentrated on the integration of migrants from those countries with which Germany had a former guest worker agreement, the second largest group of migrants, i.e. migrants from the Former Soviet Union (FSU) and its successor states, is to a large extent ignored.[1] One explanation for this disregard could be a lack of profound empirical knowledge about the integration of FSU migrants in Germany. The large majority of FSU migrants are ethnic German migrants ((*Spät-*)*Aussiedler*) who could, for a long time, not be identified in German official statistics as they are granted German citizenship upon arrival. Therefore, there is an extensive need for research in this regard. This does, however, not only arise from the sheer size of this migrant group. FSU migrants – ethnic German as well as Jewish migrants, the second most important group of FSU migrants – differ significantly from other migrant groups in terms of their sociodemographic and socioeconomic characteristics as well as with respect to the material and immaterial integration support which they have received by the German government. Therefore, inference from the integration experience of other migrant groups on FSU migrants is not possible.

Based on recent data from the German Mikrozensus, this study complements the existing literature by analyzing the integration of young FSU migrants who migrated to Germany between 1989 and 1994. During these years, migration from the FSU reached its peak and, therefore, this migrant cohort is one of the quantitatively most important in Germany. The focus of this study is on migrants who arrived below the age of 19 and who have received at least parts of their education in Germany. At the

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[1]In the following the term "FSU" is used representatively for the FSU and its successor states, namely Armenia, Azerbaijan, Belarus, Estonia, Georgia, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Moldova, Russia, Tajikistan, Turkmenistan, Ukraine, and Uzbekistan.

center of interest is the question how successful young migrants have integrated in the German educational system and how this is reflected in their early labor market outcomes. The majority of young migrants spends their whole working life and retirement in Germany. Therefore, their successful integration constitutes a great potential for the German labor market and is crucial for a sustainable functioning of the social security system.

The results reveal that migrants have lower educational attainments than comparable German-born natives. Even though the outcomes of migrants who arrived at younger ages (below age 7) are more similar to natives than migrants who arrived at older ages (age 7 to 18), they still do not achieve parity with natives. Jewish migrants have better educational outcomes on average than ethnic German migrants. A decomposition analysis reveals that this competitive edge can, for the most part, be explained by a higher socioeconomic background, i.e. parents with a higher educational level. In the labor market, migrants cannot compensate for their educational disadvantage and have poorer labor market outcomes than natives. These differences can again, to a large extent, be explained by differences in observable characteristics like, for example, family characteristics or educational attainment. Therefore, the results of this study stress the importance of an early educational integration for a successful economic integration in the long run.

The next section describes particularities of the migration and integration of ethnic German and Jewish persons from the FSU and reviews the existing literature. Section 3 presents the data and the sample restrictions on which the analysis of the educational attainment (Sections 4 and 5) and of the labor market outcomes (Section 6) is based. Section 7 summarizes the main results and concludes.

2 Institutional Context and Literature

In 2008, 15.6 million people with a migration background were living in Germany of whom more than half had German citizenship.[2] Ethnic German migrants from

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[2]The term "person with a migration background" comprises foreigners with own migration experience, naturalized and ethnic German migrants as well as the German-born children of immigrants.

the FSU make up the largest share of the more than three million ethnic German migrants living in Germany. By country of origin, FSU migrants in general are only outnumbered by Turkish migrants.

The majority of FSU migrants has arrived after the collapse of the communist system. Restrictive emigration policies as well as political tensions between Germany and the FSU had limited migration from the FSU before. Alone since the late 1980s, more than two million ethnic Germans and almost 200,000 Jewish quota refugees have immigrated from the FSU to Germany (Bundesamt für Migration und Flüchtlinge, 2006, 2009).

In contrast to immediate post-war refugee immigration or immigration in the course of guest worker recruitment, immigration from the FSU in the late 1980s was not driven by humanitarian or economic motives. The openness to ethnic German and Jewish immigration from the FSU was part of the German reconciliation policy (*Wiedergutmachung*) after the Second World War. The immigration of ethnic Germans is anchored in the German constitution and substantiated in the so-called *Bundesvertriebenengesetz*. This was introduced for persons who suffered from persecution and discrimination due to their German ancestry as a consequence of the Second World War. Jewish immigration was promoted in order to maintain and reinforce the viability of the Jewish community in Germany. Thus, in contrast to other migrant groups, FSU migrants were supposed to stay permanently in Germany from the very beginning. In order to facilitate the integration process, they were provided with extensive state support. This support comprised permanent residence permits, immediate labor market access, and material and immaterial support in the form of lump sum payments, language courses, and access to the social security systems (Harris, 2004).

FSU migrants constitute a very heterogeneous migrant group. Despite many parallels in their reception in Germany, ethnic German and Jewish FSU migrants differ in their individual characteristics as well as with regard to the extent of state support they have received. While ethnic German migrants originated predominantly from

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For a detailed definition of this term see Statistisches Bundesamt (2010).

rural areas and were mainly educated in crafts occupations, the majority Jewish migrants originated from urban areas and had an academic background. Furthermore, due to their German ancestry, ethnic German migrants had closer links to Germany in terms of culture, religion, traditions, and language. In addition, they could benefit from additional integration support if compared to Jewish migrants as they were granted German citizenship immediately after arrival, could transfer pension entitlements acquired in the FSU to Germany and they had an exclusive legal right to a recognition procedure of credentials obtained in the FSU (Cohen and Kogan, 2006; Dietz, 2000; Harris, 2004; Haug, 2007; Liebau, 2010). Thus, while ethnic Germans had the advantages of additional state support and a stronger link to the German culture, Jewish migrants had an educational advantage. It is unclear per se, which advantages are more crucial in the integration process.

Even though this study focuses on young migrants who arrived before completing education, i.e. before differences in the educational attainment could have developed between the two migrant groups, the educational differences of the young migrants' parents might still be reflected in their subsequent educational attainment. This is due to the fact that children's and parents' educational attainments are positively correlated. Explanations for this are, for example, that better educated parents have higher incomes and, as a consequence, are better able to finance their children's education or that well-educated parents are more likely to be able to support their children in the educational process (e.g. help with homework).[3]

This intergenerational transmission process is, however, likely to differ between natives and migrants (see, for example, Dustmann and Glitz, 2011). A lack of proficiency in the host country's language and/or a lack of knowledge about the educational system may limit migrant parents' capability to support their children. Furthermore, native and migrant parents may differ in the educational aspirations for their children which, in turn, leads to differences in the investment in the children's education. Finally, the ethnic capital, i.e. the average human capital of the ethnic group, can have an additional influence on the intergenerational mobility of migrant

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[3]See Black and Devereux (2011) for a detailed survey on the literature on the intergenerational mobility.

children (Borjas, 1992, 1995). Therefore, it is a priori not clear whether migrants are more or less mobile than natives.

In addition to the parents' observable and unobservable characteristics, the institutional context (like the school starting age or school tracking) has a strong impact on the degree of intergenerational mobility and can influence differences in the mobility between natives and migrants (e.g. Bauer and Riphahn, 2009; Cobb-Clark and Nguyen, 2010; Dustmann and Glitz, 2011; Schneeweis, 2011). Mühlenweg (2008) shows, for example, that later tracking is beneficial for pupils with a less favorable family background.

Detailed empirical evidence on the integration of FSU migrants is limited as research has been impeded for a long time by a lack of adequate data. Most existing studies do either focus on ethnic German migrants in general (including ethnic German migrants from other source countries like e.g. Poland and Romania), focus on migrants who arrived in a very specific and not representative time window or rely on very small sample sizes.

General evidence for the migrant population in Germany suggests that the lower educational level of migrants relative to natives is mainly due to a disadvantaged socioeconomic background (Frick and Wagner, 2000). Despite a general increase in the average educational level, Heineck and Riphahn (2009) find that the relative educational opportunity of children with disadvantaged backgrounds has not improved during the last five decades. Concerning intergenerational mobility, Gang and Zimmermann (2000) as well as Dustmann (2003) find that – in contrast to the native population – there is no significant correlation between the educational attainment of immigrant parents and their children. In other words, migrants are intergenerationally more mobile than natives.

With respect to the migrant population which is considered in this study, Müller and Stanat (2000), Fuchs and Sixt (2008) and Söhn (2008) find that ethnic German migrants (independent from the country of origin) as well as migrants from the FSU (without differentiation between ethnic German and Jewish migrants) are less likely to have upper secondary education than German natives – even after controlling for

the parental background. Existing empirical evidence on the labor market integration of ethnic German migrants finds that earlier migrant cohorts like, for example, immediate post-war migrants are relatively well integrated into the labor market. In contrast, the integration of more recent migrant cohorts was more problematic. Ethnic German migrants who arrived during the 1990s and early 2000s suffer, for example, from high unemployment rates (see, for example, Bauer and Zimmermann, 1997; Brück-Klingenberg et al., 2007; Dunn et al., 1993; Frick, 2004; Koller, 1997; Kreyenfeld and Konietzka, 2001; Schmidt, 1997; Seifert, 2008). Cohen and Kogan (2006) compare the integration of Jewish migrants in Israel and Germany in the late 1990s. The authors find that even though Jewish migrants in Germany suffer higher unemployment rates than Jewish migrants in Israel, Jewish migrants in Germany are more likely than Jewish immigrants in Israel to get high-skilled occupations. A recent study by Haberfeld et al. (2011) finds that Jewish migrants who arrived in Germany between 1994 and 2005 are better integrated into the German labor market than ethnic German immigrants.

One reason for the decreasing integration success of ethnic German migrants over time is a significant change in the composition of these migrants in terms of country of origin, attachment to the German culture, German language proficiency and skill composition (Dietz, 2000). Until the late 1980s, migrants from Poland and Romania dominated ethnic German migration. After the collapse of the FSU, the FSU has become the most important country of origin of ethnic German migrants. The share of ethnic German FSU migrants rose from 16 percent in the early 1980s to almost 95 percent in 1993. Simultaneously, there was a decrease in the skill level of ethnic German migrants (Bauer and Zimmermann, 1997). Another factor which hampered the integration process of newly-arrived migrants in the 1990s is the significant slowdown of economic growth after the German reunification in 1990 (Statistisches Bundesamt, 2012).

As has been shown, general statements about factors which have influenced the integration process of FSU migrants are limited due to the heterogeneity of the considered migrant population. Therefore, this study focuses on one specific migrant co-

hort from a single country of origin. The selected migrant population which consists of FSU migrants who arrived between 1989 and 1994 below age 19 is quantitatively one of the most important migrant groups in Germany and their particular integration conditions make their integration experience a matter of interest for future integration policy design.

3   Data

The data for this analysis stem from two waves of the German Mikrozensus from the years 2007 and 2008.[4] The Mikrozensus is a 1 percent representative sample of German households conducted by the German Statistical Office and includes demographic characteristics as well as educational and labor market information. In 2007, approximately 830,000 persons in 390,000 households were interviewed.

Since 2005, the questionnaire was incrementally expanded to allow an improved identification of the migrant population in Germany. Until 2005, the Mikrozensus exclusively contained information about the nationality of a person and the year of immigration. This information is, however, insufficient to identify naturalized migrants, ethnic German migrants, or second-generation migrants. The Mikrozensus now provides additional information about second nationalities, naturalizations and, if applicable, former nationalities. Since 2007, naturalized persons are asked explicitly if they have received German nationality based on their status as ethnic Germans. This information is crucial for the purpose of this study, which is the identification of FSU migrants and the differentiation between ethnic German and non-German migrants. Non-German migrants are likely to comprise mainly Jewish quota migrants as it was practically impossible for non-Jewish persons from the FSU to receive asylum in the early 1990s in Germany (Cohen and Kogan, 2006).[5] Both migrant groups are foreign-born and held or still hold a nationality of the FSU or

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[4]Forschungsdatenzentrum der Statistischen Ämter des Bundes und der Länder, Mikrozensus, 2007-2008.

[5]A person was recognized as Jewish quota migrant if he had at least one Jewish parent. In the following, this group is referred to as "non-German migrants" in the sense of not ethnic German. Nevertheless, non-German migrants may have acquired German citizenship in the meantime.

one of its successor states.

This study analyzes educational attainment and early labor market outcomes of young FSU migrants who arrived between 1989 and 1994. These years represent the peak of immigration from the FSU to Germany and are, therefore, crucial for the composition of the current migrant population. Young migrants are defined as migrants who arrived below the age of 19 and had not finished schooling before migration. The analysis considers only West Germany (inclusive Berlin) as only few migrants settled in East Germany. These restrictions result in a sample of FSU migrants who are between the age of 12 and 37 at the time of survey (2007/2008), i.e. birth cohorts 1971 to 1994. The integration success is evaluated by comparing these migrants to German natives from the same birth cohorts.

4   Educational Attainment

4.1   Descriptive Evidence

Table 1 presents summary statistics of the sample of natives, ethnic German migrants and non-German migrants separately for men and women. The sample comprises 165,785 natives, 1,987 ethnic German migrants and 1,023 non-German migrants who are 24 years old on average. The mean age at which these migrants arrived in Germany is 8 years.

Ethnic German migrants were eligible for German citizenship upon arrival. Nevertheless, there is a small share of ethnic German migrants who are not naturalized (2.4 percent of men and 3.5 percent of women). The reason for this is that while after 1999 ethnic German migrants received German citizenship automatically, they had to undergo a formal naturalization procedure before. Some migrants were, however, satisfied with a certificate confirming their legal status of an ethnic German which granted them access to all relevant benefits and, thus, did not apply for citizenship. For non-German immigrants, naturalization was possible 6 to 8 years after immigration. As migrants in the considered sample have been in Germany for at least 13 years at the time of survey, naturalized migrants constitute also the majority

among non-German migrants (82 to 85 percent).

Table 1: Summary Statistics – Educational Attainment

	Natives		Ethn.Germ.		Non-Germ.	
	Mean	SD	Mean	SD	Mean	SD
MEN						
Age	24.5	7.0	24.2	4.9	23.5	5.1
Age at migration	0.0	0.0	8.4	4.8	8.0	5.1
German nationality (%)	100.0	0.0	97.6	15.3	82.2	38.3
Dropout, secondary school (%)	24.6	43.1	45.0	49.8	38.7	48.7
Intermediate school (%)	44.0	49.6	40.8	49.2	36.7	48.2
Upper secondary school (%)	31.4	46.4	14.1	34.8	24.6	43.1
Still in school (%)	21.8	41.3	9.6	29.5	15.1	35.8
N	83,606		998		546	
WOMEN						
Age	24.6	6.9	23.8	4.9	23.8	5.4
Age at migration	0.0	0.0	8.2	4.8	8.4	5.2
German nationality (%)	100.0	0.0	96.5	18.3	84.7	36.0
Dropout, secondary school (%)	16.9	37.5	27.4	44.6	22.7	42.0
Intermediate school (%)	47.3	49.9	53.6	49.9	51.8	50.0
Upper secondary school (%)	35.8	47.9	18.9	39.2	25.5	43.6
Still in school (%)	21.4	41.0	12.0	32.5	16.0	36.7
N	82,179		989		477	

NOTE.–Mikrozensus 2007 and 2008. Weighted numbers. Birth cohorts 1971 to 1994, i.e. 12- to 37-year-olds. Migrants who arrived in Germany between 1989 and 1994 below age 19 without a foreign schooling degree.

At the center of interest in this study is the educational attainment of young FSU migrants. Following the three main secondary school tracks in Germany, three school-leaving degrees are differentiated: having no degree or at most a secondary degree (*Hauptschulabschluss*), having an intermediate degree (*Realschulabschluss*) or having an upper secondary degree (*Abitur*). An upper secondary degree (*Abitur*) is the highest degree and the necessary condition for access to German universities. Tracking starts at the age of 10 after four years of primary school. The average age at graduation is 16 to 17 years for secondary and intermediate school and 18 to 19 years for upper secondary school.

The youngest persons in the sample are 12 years old and their educational attainment can correspondingly not be measured by completed education. Therefore, the school-leaving degree of children who are still in school is replaced with the highest school-leaving degree obtainable in the school track the child is currently enrolled in.

Replacing effective educational attainment with expected educational attainment

is, however, related to some imprecision as children who are currently enrolled in upper secondary school might not graduate with an upper secondary degree, whereas children who are currently enrolled in secondary or intermediate school might continue after graduation with upper secondary education. Hence, the educational attainment might be over- or underestimated. However, de Haan and Plug (2011) review alternative solutions to this censoring problem and find that using a good measure for expected education dominates the application of standard censored regression models or the elimination of children who are still enrolled in schooling from the sample. Official statistics show that changing the school track is not very common in Germany. In 2000, less than 15 percent of 15-year-olds changed the track and, among those who changed, only 22 percent changed to a higher educational track (Bellenberg et al., 2004). Thus, the initial track choice seems to be a good predictor for the educational attainment and educational attainment is, if at all, overestimated.

Table 1 shows that the share of persons who are still in school and, hence, for whom this replacement method is applied is largest among natives. While more than 20 percent of natives are still enrolled in schooling, this is true for 10 to 12 percent of ethnic German migrants and 15 to 16 percent of non-German migrants.

Women have less often at most a secondary degree (or are enrolled in secondary school) on average and have an upper secondary degree (or are enrolled in upper secondary school) more often than men in the same population group. Ethnic German migrants have the lowest educational attainment, while non-German migrants' educational attainment is located between that of German natives and ethnic German migrants. Approximately one of three natives has upper secondary education, but only one of four non-German migrants and even only one of eight ethnic German migrants.

It appears likely that migrants who arrived at younger ages were better able to integrate in the German educational system. In particular, migrant children who were already enrolled in school in the FSU faced an interruption of their educational career which might have had an adverse impact on their later educational attainment.

To see whether the data provide support for this hypothesis, Figures 1 and 2 plot the share of persons with at most secondary education and the share of persons with upper secondary education by age at migration. The reference group of migrants are native peers in a comparable age. Migrants who arrived, for example, at age 5 between 1989 and 1994 are age 18 to 24 at the time of survey. Hence, they are compared to natives in this age group.

The graphs provide evidence that differences in the educational attainment between migrants and natives tend to increase with age at migration. Furthermore, there is evidence that the school starting age is crucial for the integration success. There is no clear observable trend for migrants who arrived at age 6 or younger, whereas from age 7 on, there is an upward trend in having at most a secondary degree and a downward trend in having upper secondary education. Age 10 is another important age in the German educational system as this is the age at which tracking begins. However, the two figures do not reveal a significant cut at this age.

Figure 1: Dropout, Secondary Education
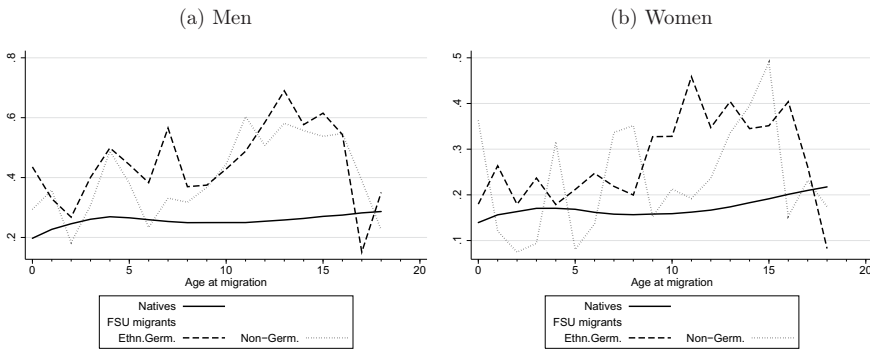
(a) Men   (b) Women

Note.–Mikrozensus 2007 and 2008. Weighted numbers. Birth cohorts 1971 to 1994, i.e. 12- to 37-year-olds. Immigrants who arrived in Germany between 1989 and 1994 and below age 19 without a foreign degree. Migrants are compared to natives in a comparable age, i.e. migrant who arrived, for example, at age 5 are 18- to 24-years-old at time of survey and are, therefore, compared to 18- to 24-year-old natives.

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Figure 2: Upper Secondary Education

(a) Men   (b) Women
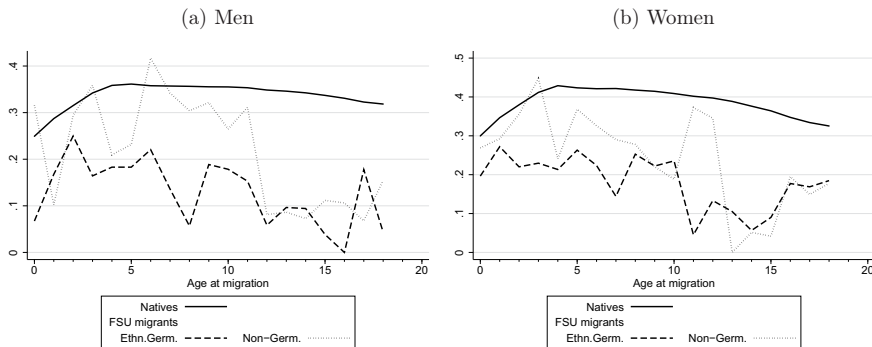
4.2 Estimation Results

To identify factors which explain differences in the educational attainment between the three population groups, a multivariate regression analysis is conducted. Table 2 presents the estimation results of a linear probability model of the likelihood of having upper secondary education.[6] Control variables are the ethnic origin, age and its square, actual school enrollment, and the age at migration as a categorical variable (migration below or equal age 6, migration between age 7 and age 10 and migration above age 10). Furthermore, age at migration is additionally included as a continuous variable to allow the age effect to differ in the four aforementioned age groups. Finally, the model includes region and year fixed effects.

The results reveal that even after controlling for age, age at migration, and current school enrollment, both migrant groups are significantly less likely to have upper secondary education than natives – men as well as women. The negative coefficient for non-German migrants is smaller in magnitude than the coefficient of ethnic German migrants, i.e. the gap between non-German migrants and natives (8.6 percentage points for men and 19.1 percentage point for women) is smaller than the gap between ethnic German migrants and natives (18.6 percentage points for men and 26.4

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[6]Neither does excluding children who are still enrolled in schooling nor does estimating a (ordered) logit or a (ordered) probit model change the main results. See Table A.1.

Table 2: Probability of Upper Secondary Education

| | Men | | Women | |
	Coef.	SE	Coef.	SE
Ethn. Germ. FSU migrant	-0.186***	0.046	-0.264***	0.050
Non-Germ. FSU migrant	-0.086*	0.049	-0.191***	0.054
Age	0.193***	0.002	0.215***	0.002
Age^2	-0.003***	0.000	-0.004***	0.000
Actual school enrollment	0.499***	0.006	0.511***	0.006
Age at migration ≤6	0.111***	0.036	0.149***	0.038
Age at migration 7-10 (Ref.)				
Age at migration 11-18	-0.128***	0.038	-0.135***	0.041
Age at migration	-0.000	0.005	0.007	0.005
Constant	-2.310***	0.026	-2.503***	0.027
Region and year fixed effects	Yes		Yes	
R^2	0.098		0.102	
F	721.156		722.182	
N	85,150		83,645	

NOTE.–See notes Table 1. Robust standard errors. * p<0.10, ** p<0.05, *** p<0.01

percentage points for women).[7]

The estimated model controls for the age at migration in two ways. First, a set of dummy variables is included which indicates whether migrants arrived before primary school starting age (age 6 or younger) or whether they arrived during secondary school (age 11 to 18). Thus, the reference group are migrants who arrived in primary school age. Second, the model includes the age at migration additionally as continuous variable to allow the effect of the age at migration to vary within the three age groups. The results confirm that migrant men (women) who arrived at age 6 or younger are 11.1 (14.9) percentage points more likely to have upper secondary education than migrants in the reference group and migrant men (women) who arrived at age 11 or older are 12.8 (13.5) percentage points less likely. The coefficients of the continuous age at migration variable are close to zero and statistically insignificant.

As social mobility is rather low in Germany, i.e. the socioeconomic status of children is strongly influenced by the socioeconomic status of their parents, the higher educational attainment of non-German migrants relative to ethnic German migrants could be driven by the higher educational level of their parents. As described in

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[7]These differences refer to migrants who arrived between age 6 and age 11. Estimating the model for migrants only shows that the differences between ethnic German and non-German migrants are statistically significant.

Section 2, Jewish migrants often had an academic background whereas many ethnic German migrants were educated in crafts occupations. Better educated migrant parents might be better able to support the educational success of their children in the host country. Against this background, the educational attainment of the three population groups is further analyzed with particular consideration of the parents' educational level.

5 Educational Attainment and Socioeconomic Background

5.1 Descriptive Evidence

The Mikrozensus provides information about parents' education as long as children live in their parents' household. As children's decision to move out of the parental home might be influenced by their observable and unobservable characteristics which are correlated with their educational attainment, there is a sample selection problem if older children who still live with their parents are included in the analysis. For this reason, the following analysis is restricted to children below the age of 20 who live with both parents in one household.[8] This upper age limit implies that the sample includes only migrants who arrived below the age of 7.

Table 3 presents summary statistics of the parents-children-sample. Due to the relatively small sample size, it is refrained from considering men and women separately. Analogously to the children's educational attainment, the parents' educational attainment is classified according to the three main school tracks. The children are 16 to 17 years old on average and the majority is still enrolled in schooling. But while almost three quarters of natives are currently enrolled in schooling, this applies to only half of the migrant population. 29.0 percent of natives, 21.8 percent of ethnic

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[8]A child is defined as a single person who has no own children and who lives with his parents. There is no age restriction. Children in single households are excluded as, first, the prevalence of single parent household differs between natives and migrants, and, second, the intergenerational educational transmission is likely to be influenced by single parenthood.

Table 3: Summary Statistics – Parents' Education

	Natives		Ethn.Germ.		Non-Germ.	
	Mean	SD	Mean	SD	Mean	SD
Age	15.9	2.0	17.3	1.5	17.3	1.6
Female (%)	47.3	49.9	51.9	50.0	44.5	49.8
Age at migration	0.0	0.0	2.3	1.7	2.4	1.7
No. of siblings	1.2	0.9	1.4	1.3	1.3	1.3
Dropout, secondary school (%)	14.4	35.1	26.8	44.4	21.9	41.5
Intermediate school (%)	56.6	49.6	51.4	50.1	48.3	50.1
Upper secondary school (%)	29.0	45.4	21.8	41.4	29.8	45.8
Actual school enrollment (%)	74.9	43.3	48.3	50.0	54.7	49.9
MOTHERS' EDUCATION						
Dropout, secondary school (%)	37.4	48.4	42.0	49.4	31.9	46.7
Intermediate school (%)	44.5	49.7	52.5	50.0	51.9	50.1
Upper secondary school (%)	18.1	38.5	5.5	22.8	16.2	37.0
FATHERS' EDUCATION						
Dropout, secondary school (%)	45.4	49.8	54.9	49.8	39.1	48.9
Intermediate school (%)	32.9	47.0	42.5	49.5	45.0	49.9
Upper secondary school (%)	21.8	41.3	2.6	15.9	15.9	36.7
N	34,917		345		200	

NOTE.–Mikrozensus 2007 and 2008. Weighted numbers. Birth cohorts 1987 to 1994, i.e. 12- to 19-year-olds. Migrants who arrived in Germany between 1989 and 1994 below age 7 without a foreign schooling degree. Persons who live in the same household as both their parents.

German migrants and 29.8 percent of non-German migrants have upper secondary education.

The middle and the lower panel of Table 3 present the educational attainments of the mothers and fathers. Among natives, 18.1 percent (21.8 percent) of mothers (fathers) have an upper secondary degree. Among migrants, 16.2 percent (15.9 percent) of non-German migrant mothers (fathers) have an upper secondary degree, whereas this applies to only 5.5 percent (2.6 percent) of ethnic German migrant mothers (fathers).

Table 4 presents unconditional relations between children's and parents' educational attainment. The parental education is defined as the highest degree obtained by one of the parents. These correlations confirm the picture of Germany as a country with low social mobility as the share of children with upper secondary education is much lower among children whose parents have at most a secondary degree than among children whose parents have an upper secondary degree. A native child of parents with a high educational attainment has almost a four times higher probability of having upper secondary education than a child with a lower educational background

Table 4: Correlation between Children's and Parents' Education

	PARENTS' EDUCATION					
	Dropout, secondary		Inter- mediate		Upper secondary	
	Mean	SD	Mean	SD	Mean	SD
	NATIVES					
Dropout, secondary school (%)	28.7	45.2	12.1	32.6	4.1	19.7
Intermediate school (%)	58.9	49.2	61.6	48.6	46.7	49.9
Upper secondary school (%)	12.5	33.1	26.3	44.0	49.3	50.0
N	34,917					
	ETHN.GERM.					
Dropout, secondary school (%)	34.4	47.7	22.5	41.9	18.6	39.7
Intermediate school (%)	47.9	50.1	55.8	49.8	37.1	49.3
Upper secondary school (%)	17.7	38.3	21.7	41.3	44.3	50.7
N	345					
	NON-GERM.					
Dropout, secondary school (%)	33.9	47.7	21.6	41.4	6.5	24.9
Intermediate school (%)	43.5	50.0	57.3	49.7	34.7	48.2
Upper secondary school (%)	22.6	42.2	21.1	41.0	58.8	49.8
N	200					

NOTE.–See notes Table 3. Parents' education is defined as the highest degree obtained by one of the parents.

(49.3 percent compared to 12.5 percent). This ratio is lower among migrants (2.5 to 2.9) which is in line with previous findings that intergenerational mobility is more pronounced among migrants than among comparable natives. However, as perfect mobility is defined by a ratio of 1, migrants are also far from being perfectly mobile.

5.2 Estimation and Decomposition Results

Table 5 presents conditional correlations between children's and parents' educational attainment after controlling for individual and family characteristics. Table 5 shows that the consideration of parental education reduces the gap in upper secondary school enrollment between natives and ethnic German migrants from 11.3 percentage points (Specification I) to 7.3 percentage points (Specification II).[9] The coefficient for non-German migrants becomes also smaller in magnitude, is, however, in none of the two specifications significantly different from zero.

Specification II shows that parents' educational level has a significant impact on children's educational attainment. In comparison to children whose parents have an

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[9]This comparison refers to a migrant who arrived at age 0 in Germany.

Table 5: Probability of Upper Secondary Education – Parents' Education

	I		II		III	
	Coef.	SE	Coef.	SE	Coef.	SE
Ethn. Germ. FSU migrant	-0.113***	0.035	-0.073**	0.034	-4.713**	1.980
Non-Germ. FSU migrant	-0.049	0.037	-0.035	0.036	-7.614***	2.483
Age	-0.164***	0.013	-0.133***	0.013	-0.140***	0.013
Age^2	0.010***	0.000	0.008***	0.000	0.009***	0.000
Female	0.034***	0.004	0.035***	0.004	0.036***	0.004
No. of siblings	-0.005**	0.002	-0.009***	0.002	-0.009***	0.002
Actual school enrollment	0.679***	0.005	0.621***	0.005	0.620***	0.005
Age at migration	0.021	0.027	0.018	0.026		
Age at migration^2	-0.005	0.005	-0.005	0.005		
Dropout, secondary (parents)			-0.079***	0.004	-0.081***	0.004
Intermediate (parents) (ref.)						
Upper secondary (parents)			0.151***	0.005	0.150***	0.005
Ethn. Germ. FSU migrant ×						
Dropout, secondary (parents)					0.070*	0.036
Upper secondary (parents)					-0.000	0.078
Age					0.580**	0.237
Age^2					-0.018**	0.007
Female					-0.014	0.035
No. of siblings					-0.000	0.011
Actual school enrollment					-0.007	0.046
Age at migration					0.019	0.036
Age at migration^2					-0.005	0.006
Non-Germ. FSU migrant ×						
Dropout, secondary (parents)					0.127**	0.051
Upper secondary (parents)					0.138**	0.064
Age					0.899***	0.297
Age^2					-0.026***	0.009
Female					-0.004	0.043
No. of siblings					0.010	0.015
Actual school enrollment					0.063	0.052
Age at migration					-0.087*	0.048
Age at migration^2					0.013*	0.007
Constant	-0.151	0.104	-0.316***	0.103	-0.261**	0.104
Region and year fixed effects	Yes		Yes		Yes	
R^2	0.395		0.429		0.431	
F	1630.127		1657.860		621.718	
N	35,462		35,462		35,462	

NOTE.–See notes Table 3. Standard errors are clustered on family level. * p<0.10, ** p<0.05, *** p<0.01

intermediate degree, children whose parents have at most a secondary degree are significantly less likely (by 7.9 percentage points) and children whose parents have an upper secondary degree are significantly more likely (by 15.1 percentage points) to have themselves upper secondary education.

As it appears likely that the impact of parents' education on children's education

differs between natives and migrants, Specification III presents the regression results of a fully interacted model. The middle panel of Table 5 presents the coefficients of the interaction between an ethnic German migrant dummy and the control variables and the lower panel presents the respective coefficients for non-German migrants.

As hypothesized, the results confirm that the effect of parents' education and children's education differs significantly between natives, ethnic German and non-German migrants. The coefficients of the interaction between the migrant dummies and the dummy indicating that the parents have at most a secondary degree are both positive and significant, i.e. have the opposite sign of the baseline coefficient of German natives. This indicates that a lower socioeconomic background is less detrimental for migrant children's educational attainment as it reduces their probability of upper secondary school enrollment less if compared to native children. While the impact of having parents with an upper secondary degree does not differ significantly between natives and ethnic German migrants, having highly educated parents is more beneficial for non-German migrants than for natives or ethnic German migrants.

Another interesting result is that the age at migration has no significant impact on ethnic German migrant children's probability of having upper secondary education, whereas non-German migrants' probability decreases with higher age at arrival. One explanation why arriving at younger ages is only beneficial for non-German migrants could be that ethnic German migrants already had better German language skills at arrival due to their German ancestry, whereas non-German migrants had to learn German from scratch. The negative coefficient of the age at migration could, hence, depict the language advantage which non-German migrants who arrived at younger ages had in comparison to non-German migrants who arrived at older ages. This pre-school language advantage would not be relevant for ethnic German migrants if they had already been fluent in German and would explain the absence of a negative age at migration effect for these migrants. Unfortunately, this hypothesis cannot be tested directly as the Mikrozensus does not include information about language proficiency.

To better understand the factors that lead to differences in the educational out-

comes, a detailed Blinder-Oaxaca decomposition is performed (Blinder, 1973; Oaxaca, 1973). This method allows to distinguish the *explained* part of the raw differences in the means of upper secondary school enrollment, which is attributable to different observable characteristics (endowment effect), from the *unexplained* part, which is attributable to different coefficients (behavioral effect). The latter part can arise, for example, from different intergenerational transmission mechanisms, from different (unobserved) language skills or any other unobserved variable. The decomposition analysis has the following formula:

$$\overline{Y}_A - \overline{Y}_B = \Delta_{OLS} = (\overline{\mathbf{X}}_A - \overline{\mathbf{X}}_B)\hat{\beta}_A + \overline{\mathbf{X}}_B(\hat{\beta}_A - \hat{\beta}_B,), \tag{1}$$

where $\overline{Y}_g = N_g^{-1} \sum_{i=1}^{N_g} Y_{ig}$ and $\overline{\mathbf{X}}_g = N_g^{-1} \sum_{i=1}^{N_g} \mathbf{X}_{ig}$ with $g = (A, B)$.

The first term of the right-hand side represents the explained part of the gap and the second term the unexplained part. These two parts can be further decomposed to identify the explanatory power of single variables. If the estimation includes, however, a set of dummy variables (e.g. categories of parental education), it has to be taken into account that the coefficients of these dummies are not invariant to the choice of the reference category (Fortin et al., 2011; Schmidt, 1998; Yun, 2005). For this reason, categorical variables are aggregated into groups (e.g. "parents' education"). At least for the explained part, the subsequent interpretation is unaffected by the arbitrary choice of the reference category. Nevertheless, the interpretation of the part of the difference which is due to the constant terms and the coefficients remains problematic (Schmidt, 1998). Therefore, it is refrained from interpreting the unexplained part of the differences in detail.

Table 6 presents the decomposition results for participation in upper secondary education based on model specification II in Table 5.[10] The decomposition is conducted pairwise for the three population groups.[11]

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[10]Bauer and Sinning (2008) have generalized the Blinder-Oaxaca decomposition method to nonlinear models. Table A.2 presents the decomposition results for a probit and for a logit model of the probability of upper secondary education which do, however, not differ from the decomposition results of the linear probability model.

[11]Changing the reference group does not change the main results.

Table 6: Blinder-Oaxaca Decomposition – Upper Secondary Education

Group 1 Group 2	Ethn.Germ. Natives		Non-Germ. Natives		Non-Germ. Ethn.Germ.	
	Mean	SD	Mean	SD	Mean	SD
Overall						
Group 1	0.218***	0.023	0.298***	0.033	0.298***	0.034
Group 2	0.290***	0.003	0.290***	0.003	0.218***	0.023
Difference	-0.072***	0.023	0.008	0.034	0.080**	0.041
Explained	0.033	0.038	0.003	0.053	0.054*	0.031
Unexplained	-0.105***	0.039	0.004	0.053	0.026	0.030
Explained						
Personal characteristics	0.027*	0.015	0.068***	0.021	0.037	0.027
Age at migration	0.031	0.034	-0.040	0.047	-0.000	0.001
Parents' education	-0.040***	0.004	-0.011*	0.007	0.031***	0.011
Year and region effects	0.016***	0.005	-0.013**	0.006	-0.014	0.011
Unexplained						
Personal characteristics	4.775**	2.017	7.632***	2.507	2.861	3.217
Age at migration	-0.026	0.023	-0.058*	0.033	-0.103	0.070
Parents' education	0.026	0.016	0.068***	0.023	0.040	0.027
Year and region effects	-0.092***	0.035	-0.029	0.039	0.048	0.051
Constant	-4.788**	1.999	-7.609***	2.479	-2.820	3.184

NOTE.–See notes Table 3. Decomposition made using the user-written Stata command `oaxaca` (Jann, 2008).
* p<0.10, ** p<0.05, *** p<0.01

The results show that the 7.2 percentage points mean difference in upper secondary education between natives and ethnic German migrants is mainly driven by the unexplained part. If natives and migrants had the same observable characteristics, the different coefficients would even lead to a gap in upper secondary school enrollment of 10.5 percentage points. Even though the explained part of the gap is not significantly different from zero in total, the breakdown of the explained part into different variable groups reveals that a positive impact of ethnic German migrants' favorable personal characteristics is offset by a negative impact of a relatively low educational background of their parents.

The difference in upper secondary school enrollment between natives and non-German migrant is small and not statistically significant – neither the explained nor the unexplained part per se is significantly different from zero.

Finally, Table 6 shows that the 8 percentage points higher upper secondary school enrollment of non-German migrants compared to ethnic German migrants is to a large extent attributable to differences in parents' education. These differences ex-

plain more than half of the explained difference and almost 40 percent of the overall difference.

In sum, the results of this section show that in particular ethnic German migrants have lower educational attainments than comparable natives. These differences are mainly driven by behavioral effects which can comprise (unobservable) language problems, different intergenerational transmission mechanisms, different aspirations, etc. The higher educational attainment of non-German migrants relative to ethnic German migrants can be to a large extent explained by a higher educational level of their parents.

6   Labor Market Outcomes

6.1   Descriptive Evidence

This section considers the early labor market outcomes of young FSU migrants in terms of employment probabilities, occupational position, and income. Again, the analysis starts with considering descriptive statistics before applying multivariate regression and decomposition methods to isolate determinants of the labor market outcomes.

The analysis of the labor market outcomes is restricted to persons who are relevant for the labor market, i.e. persons aged 16 or older who are currently not enrolled in any type of education (schooling, apprenticeship, university studies, etc.). This restriction leads to the exclusion of a relatively large share of persons and may cause a sample selection bias. 22.7 percent of natives, 24.6 percent of ethnic German migrants and 27.6 percent of non-German migrants above age 15 have to be excluded as they still strive for a schooling degree, a vocational degree, or a university degree. It has to be assumed that the remaining sample is negatively selected as persons who spend less time in the educational system are more likely to remain in the sample. Therefore, the results of this analysis have to be regarded as the lower bound for the labor market outcomes and not as representative for the overall population. The estimated differences between natives and migrants or between the two migrant

groups are, however, only biased if the three population groups underlied different selection processes.

Table 7 shows that migrants are on average younger than natives, more likely to be married and have more children. Even though non-German migrants have on average higher school-leaving degrees than ethnic German migrants, the share of non-German migrants without a vocational degree or a university degree is higher than the respective shares of natives and ethnic German migrants. Both migrant groups are less likely to have tertiary education than natives.

Regarding the labor market activity, Table 7 reveals that migrant men have lower employment rates and higher unemployment rates than native men. Among women, employment rates of migrants are also lower than employment rates of natives, whereas unemployment rates are comparable. Instead, migrant women are more often out of the labor force than native women.

It appears likely that the labor market outcomes of migrants vary with the age at migration as this has turned out to be correlated with the educational attainment. Therefore, Figure 3 presents the employment rate (as share of the overall population, i.e. employed persons, unemployed persons and persons out of the labor force) by age at migration. While there are no obvious differences between native and migrant men, there is evidence that migrant women who arrived at older ages are more likely to differ from comparable native women than migrant women who arrived at younger ages. Considering labor force participants only (Figure 4), there is no evidence for a diverging trend between natives and migrants with age at migration.[12]

Table 7 further presents the shares of employed persons in white-collar occupations. While these shares are comparable among women (72.3 percent of non-German migrants, 73.7 percent of ethnic German migrants and 78.2 percent of natives), there are pronounced differences among men. 54.3 percent of employed native men work in white-collar occupations, but only 33.1 percent of non-German migrants and 26.6 percent of ethnic German migrants. Again, the respective shares are plotted by age at migration (Figure 5).

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[12]The high volatility of the graphs for migrant women is due to the low number of observations in each age cell.

Table 7: Summary Statistics – Labor Market Outcomes

	MEN						WOMEN					
	Natives		Ethn.Germ.		Non-Germ.		Natives		Ethn.Germ.		Non-Germ.	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Age	28.5	5.2	26.1	4.3	26.1	4.4	28.4	5.2	25.7	4.4	26.4	4.6
Married (%)	24.4	42.9	39.8	49.0	34.9	47.7	35.6	47.9	46.3	49.9	47.2	50.0
No. of children	0.8	1.0	1.3	1.2	1.3	1.2	0.9	1.0	1.3	1.3	1.4	1.1
Age at migration	0.0	0.0	10.1	4.4	10.4	4.7	0.0	0.0	9.9	4.5	10.7	4.6
Dropout, secondary school (%)	31.0	46.3	52.0	50.0	47.9	50.0	21.3	41.0	34.1	47.5	29.2	45.5
Intermediate school (%)	40.6	49.1	38.7	48.7	34.8	47.7	46.7	49.9	53.9	49.9	55.0	49.8
Upper secondary school (%)	28.3	45.1	9.3	29.1	17.4	37.9	31.9	46.6	12.0	32.5	15.8	36.6
No vocational/university degree (%)	20.7	40.5	30.3	46.0	36.4	48.2	20.3	40.2	29.3	45.5	30.6	46.1
Apprenticeship (%)	54.8	49.8	62.2	48.5	55.7	49.8	55.1	49.7	62.4	48.5	63.1	48.3
Technical school (%)	8.3	27.5	3.8	19.0	5.3	22.5	8.6	28.0	5.1	22.1	3.0	17.1
Tertiary education (%)	16.3	37.0	3.7	19.0	2.6	15.8	16.0	36.7	3.2	17.5	3.3	17.9
Employed (%)	82.3	38.2	77.0	42.1	79.5	40.4	73.3	44.2	63.7	48.1	64.3	48.0
Unemployed (%)	6.6	24.8	10.1	30.1	8.8	28.3	5.5	22.8	5.9	23.5	4.9	21.6
Not in the labor force (%)	11.2	31.5	12.9	33.5	11.7	32.3	21.2	40.9	30.4	46.0	30.8	46.2
N	48,693		671		328		51,133		672		300	
Part-time employed (%)[1]	7.4	26.1	4.3	20.2	11.0	31.3	31.9	46.6	41.2	49.3	40.7	49.3
White-collar occupation (%)[1]	54.4	49.8	26.6	44.2	33.1	47.2	78.3	41.2	73.7	44.1	72.3	44.9
Civil servant (%)[1]	4.4	20.5	1.0	9.8	1.0	9.9	6.7	25.1	2.1	14.4	1.6	12.7
N	40,024		516		263		37,205		423		191	
Income[2]	1,762	1,090	1,547	755	1,571	1,160	1,330	750	1,035	449	1,009	460
N	36,641		486		246		31,522		334		163	

NOTE.–Mikrozensus 2007 and 2008. Weighted numbers. Birth cohorts 1971 to 1992, i.e. 16- to 37-year-olds. Migrants who arrived in Germany between 1989 and 1994 below age 19 without a foreign schooling degree. Persons without actual participation in education. [1]Employed persons. [2]Employed persons whose main source of income are labor earnings.

Figure 3: Employment vs. Unemployment/Not in the Labor Force
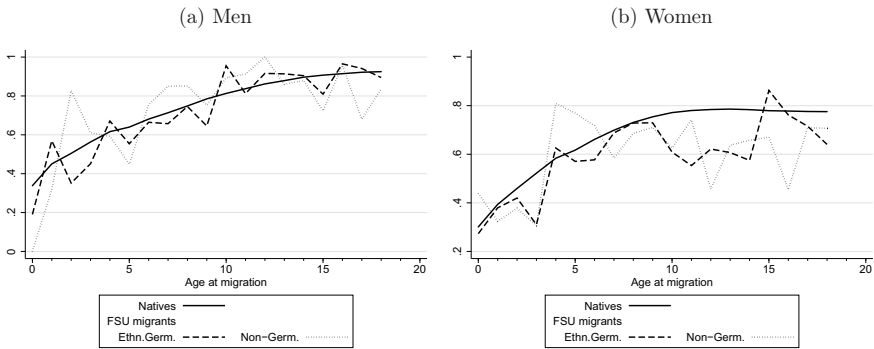
(a) Men   (b) Women

Figure 4: Employment vs. Unemployment

(a) Men   (b) Women

While employment per se seems to be relatively independent from the age at migration, there is clear evidence for a diverging trend in the type of employment between native and migrant men with age at migration. The graphs suggest that migrants who arrived at younger ages and have spent more time in the German educational system accordingly are more likely to be employed in a white-collar occupation.

Figure 5: White-Collar Occupation

(a) Men   (b) Women
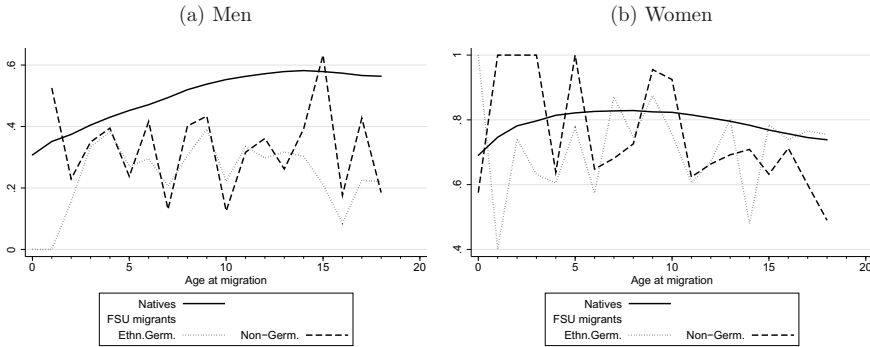
NOTE.–See notes Figure 3. Employed persons.

In addition, Table 7 provides income information. The Mikrozensus reports the net monthly income which comprises labor earnings, bonus payments, child allowances, unemployment benefits, etc.[13] This analysis includes only the income of employed persons who report their main source of income to be labor earnings. Migrants report, on average, lower incomes than natives. Men's incomes lie between 1,547 euros for ethnic German migrants and 1,730 euros for natives, women's incomes between 1,009 euros for non-German migrants and 1,330 euros for natives.

The graphic representation of the average income in Figure 6 does not reveal systematic differences with regard to the age at migration. Given the different shares of persons in white-collar occupations, this is at first sight surprising. However, one explanation for this apparent contradiction could be that income differentials between blue-collar and white-collar occupations are not yet fully pronounced at young ages. Persons in blue-collar occupations have already experienced some earnings growth at the time when persons with white-collar occupations, who have usually a longer duration of training, enter the labor market. However, as persons in white-collar occupations experience faster earnings growth than persons in blue-collar occupations,

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[13]The income is reported in categories. For the summary statistics and the analysis, the income information is transformed in a continuous variable by taking the mean of each income category. As no migrant and less than 0.1 percent of natives fall into the highest income category, the upper limit is not considered as binding and it is refrained from using a censored regression model in the next section.

they overtake persons in blue-collar occupations in the middle-run which leads to significant differentials in lifetime earnings which are not yet observable at young ages (Card, 1999).

Figure 6: Income

(a) Men   (b) Women
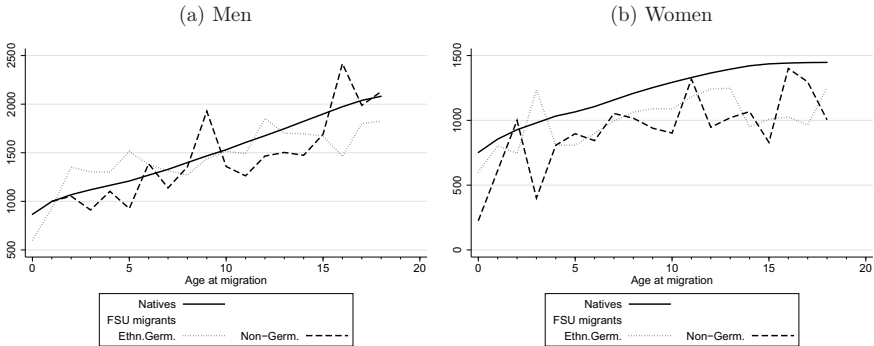
NOTE.–See notes Figure 3. Employed persons whose main source of income are labor earnings.

6.2 Decomposition Results

This section tries to isolate determinants of the to some extent diverging labor market outcomes between natives, ethnic German and non-German migrants by applying a Blinder-Oaxaca-type decomposition as has been done in Section 5.2.[14]

Table 8 presents the decomposition results for the employment probabilities. Neither the explained nor the unexplained part of the significant 5.2 percentage points difference in the employment rates between ethnic German migrant men and native men is significantly different from zero. Considering, however, subgroups of explanatory variables, reveals that less favorable personal characteristics and a lower educational level contribute significantly to the explanation of the employment gap.

Even though the employment rates of non-German migrant men and native men are not significantly different, the decomposition reveals that among migrants, a

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[14]The underlying regressions by population groups are presented in Tables A.3 and A.4. The presented employment probabilities as well as the probability of having a white-collar occupation are based on a linear probability model. Using a probit or a logit model does not alter the main results.

Table 8: Blinder-Oaxaca Decomposition – Labor Market Outcomes I

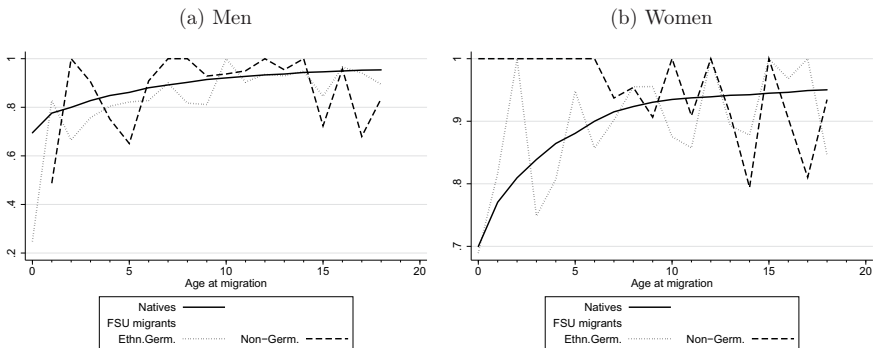| Group 1 / Group 2	MEN Ethn.Germ. Natives Mean	SD	MEN Non-Germ. Natives Mean	SD	MEN Non-Germ. Ethn.Germ. Mean	SD	WOMEN Ethn.Germ. Natives Mean	SD	WOMEN Non-Germ. Natives Mean	SD	WOMEN Non-Germ. Ethn.Germ. Mean	SD
					EMPLOYMENT VS. UNEMPLOYMENT/NOT IN THE LABOR FORCE							
Overall												
Group 1	0.770***	0.017	0.795***	0.024	0.795***	0.024	0.637***	0.019	0.643***	0.029	0.643***	0.029
Group 2	0.823***	0.002	0.823***	0.002	0.770***	0.017	0.733***	0.002	0.733***	0.002	0.637***	0.019
Difference	-0.052***	0.017	-0.028	0.024	0.025	0.030	-0.096***	0.019	-0.090***	0.029	0.006	0.034
Explained	-0.010	0.035	-0.238***	0.057	-0.039**	0.018	-0.091*	0.037	-0.184***	0.067	0.018	0.019
Unexplained	-0.042	0.040	0.211***	0.059	0.064**	0.026	-0.005	0.040	0.094	0.066	-0.011	0.031
Explained												
Personal characteristics	-0.019***	0.004	-0.022***	0.006	-0.007	0.013	-0.086***	0.006	-0.080***	0.008	0.024	0.015
Age at migration	0.042	0.034	-0.166***	0.056	-0.006	0.007	0.031	0.036	-0.071	0.065	-0.014	0.010
Education	-0.030***	0.007	-0.056***	0.010	-0.030**	0.012	-0.031***	0.006	-0.036***	0.010	-0.007	0.010
Year and region	-0.004***	0.001	0.006***	0.002	0.004	0.007	-0.005***	0.002	0.004	0.002	0.014*	0.008
Unexplained												
Personal characteristics	0.866	0.637	0.694	0.945	-0.168	1.134	0.443	0.656	-0.027	1.140	-0.489	1.312
Age at migration	-0.072	0.108	-0.242	0.185	-0.373	0.229	-0.096	0.132	-0.260	0.199	-0.252	0.249
Education	0.009	0.038	-0.085*	0.047	-0.091	0.060	-0.085**	0.039	-0.092	0.061	-0.005	0.072
Year and region	-0.056*	0.034	0.006	0.038	0.068	0.050	-0.046	0.037	-0.027	0.048	0.013	0.060
Constant	-0.790	0.627	-0.163	0.942	0.628	1.127	-0.221	0.638	0.501	1.110	0.722	1.276
					EMPLOYMENT VS. UNEMPLOYMENT							
Overall												
Group 1	0.884***	0.014	0.901***	0.020	0.901***	0.020	0.916***	0.013	0.930***	0.020	0.930***	0.020
Group 2	0.926***	0.001	0.926***	0.001	0.884***	0.014	0.930***	0.001	0.930***	0.001	0.916***	0.013
Difference	-0.042***	0.014	-0.025	0.020	0.017	0.024	-0.014	0.013	-0.001	0.020	0.014	0.024
Explained	0.006	0.037	-0.179***	0.058	-0.025**	0.011	-0.042	0.034	-0.191***	0.055	0.004	0.010
Unexplained	-0.048	0.041	0.154***	0.058	0.041*	0.023	0.028	0.039	0.191***	0.048	0.010	0.024
Explained												
Personal characteristics	-0.007***	0.003	-0.011***	0.004	-0.008	0.008	-0.024***	0.003	-0.020***	0.003	0.012	0.010
Age at migration	0.040	0.036	-0.135**	0.058	-0.005	0.006	-0.000	0.034	-0.156***	0.055	-0.014	0.010
Education	-0.030***	0.003	-0.035***	0.005	-0.003	0.006	-0.020***	0.003	-0.018***	0.005	0.003	0.004
Year and region	0.003***	0.001	0.002	0.002	-0.008	0.007	0.003**	0.001	0.002	0.002	0.003	0.007
Unexplained												
Personal characteristics	0.756	0.799	0.097	0.952	-0.654	1.236	0.852	0.736	-1.702***	0.591	-2.562***	0.935
Age at migration	-0.094	0.097	-0.350**	0.162	-0.425**	0.207	-0.110	0.115	-0.043	0.121	-0.074	0.185
Education	0.058	0.039	-0.064	0.041	-0.125**	0.056	-0.046	0.039	-0.157***	0.051	-0.112*	0.064
Year and region	-0.067**	0.029	0.005	0.027	0.080**	0.038	-0.057**	0.025	-0.086***	0.029	-0.033	0.039
Constant	-0.701	0.802	0.465	1.002	1.166	1.277	-0.611	0.720	2.179***	0.597	2.790***	0.926

NOTE.–Mikrozensus 2007 and 2008. Weighted numbers. Birth cohorts 1971 to 1992, i.e. 16- to 37-year-olds. Migrants who arrived in Germany between 1989 and 1994 below age 19 without a foreign schooling degree. Persons without actual participation in education. Control variables are age, marital status, number of children, school-leaving degree, vocational degree, age at migration and age at migration squared. Further control variables in the income regression are dummy variables for part-time employment, for white-collar occupation, for civil servant and occupation fixed effects. Personal characteristics comprise age, marital status and the number of children. Education comprises school-leaving degrees, vocational degrees and university degrees. Decomposition made using the user-written Stata command oaxaca (Jann, 2008). * p<0.10, ** p<0.05, *** p<0.01

negative endowment effect (explained part) is offset by a positive behavioral effect (unexplained part). If non-German migrants and natives had the same coefficients, differences in the observable characteristics would lead to a 23.8 percentage points lower employment rate among non-German migrants. However, this disadvantage is compensated by the fact that non-German migrants have higher returns to their individual characteristics.

Finally, comparing migrant men with each other shows that there is no significant difference in the employment rate. But again, there is a trade-off between explained and unexplained differences. While ethnic German migrants have more favorable observable characteristics, non-German migrants have higher returns to their characteristics.

For women, Table 8 shows that the gap between ethnic German migrants and natives (9.6 percentage points) is mainly due to differences in observable characteristics. The raw difference in the employment rates between non-German migrant women and native women accounts for 9 percentage points. Like non-German migrant men, non-German migrant women have less favorable characteristics which reduce their employment probabilities relative to natives. However, unlike men, non-German migrant women cannot fully compensate for this negative endowment effect through a positive behavioral effect. Differences between ethnic German and non-German migrant women are small and statistically insignificant.

The lower panel of Table 8 presents the decomposition results of the employment probability exclusively for persons in the labor force. While this does hardly affect men's results, differences between native and migrant women become smaller and loose significance. On the one hand, this could indicate that there is a positive self-selection of migrant women into the labor force, i.e. only the most successful migrant women enter the labor market. On the other hand, the high share of migrant women who are out of the labor force could simply reflect different (cultural) preferences concerning the labor market participation of women.

Table 9 presents the decomposition results for the different shares in white-collar occupations as well as for the income. The gap in white-collar occupations between

Table 9: Blinder-Oaxaca Decomposition – Labor Market Outcomes II

Group 1 / Group 2	MEN						WOMEN					
	Ethn.Germ. Natives		Non-Germ. Natives		Non-Germ. Ethn.Germ.		Ethn.Germ. Natives		Non-Germ. Natives		Non-Germ. Ethn.Germ.	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
WHITE-COLLAR OCCUPATION[1]												
Overall												
Group 1	0.266***	0.020	0.331***	0.031	0.331***	0.031	0.737***	0.022	0.723***	0.032	0.723***	0.032
Group 2	0.544***	0.003	0.544***	0.003	0.266***	0.020	0.783***	0.002	0.783***	0.002	0.737***	0.022
Difference	-0.278***	0.020	-0.213***	0.031	0.065*	0.037	-0.046**	0.022	-0.060*	0.033	-0.014	0.039
Explained	-0.246***	0.050	-0.228***	0.076	0.009	0.019	0.066	0.053	-0.112	0.077	0.001	0.019
Unexplained	-0.032	0.054	0.015	0.083	0.056*	0.034	-0.111**	0.057	0.051	0.081	-0.016	0.037
Explained												
Personal characteristics	0.001	0.003	-0.006	0.004	-0.008	0.007	0.003	0.003	-0.000	0.004	0.002	0.006
Age at migration	-0.135***	0.049	-0.121	0.075	0.001	0.006	0.060	0.052	-0.115	0.076	0.001	0.007
Education	-0.111***	0.007	-0.093***	0.011	0.024	0.016	0.003	0.007	0.008	0.010	-0.008	0.015
Year and region	-0.001	0.002	-0.008***	0.003	-0.008	0.009	-0.000	0.001	-0.004***	0.001	0.006	0.011
Unexplained												
Personal characteristics	0.142	0.977	0.946	1.373	0.805	1.674	-1.028	0.981	0.582	1.526	1.604	1.808
Age at migration	-0.076	0.155	0.015	0.256	0.104	0.303	-0.082	0.172	-0.150	0.238	-0.244	0.304
Education	0.126**	0.051	0.160**	0.072	0.027	0.088	0.187***	0.061	0.078	0.082	-0.095	0.102
Year and region	0.001	0.041	-0.020	0.054	-0.020	0.067	-0.029	0.044	-0.014	0.057	0.005	0.071
Constant	-0.225	0.949	-1.086	1.348	-0.861	1.638	0.842	0.958	-0.445	1.516	-1.287	1.787
INCOME[2]												
Overall												
Group 1	7.268***	0.019	7.205***	0.039	7.205***	0.039	6.833***	0.028	6.810***	0.039	6.810***	0.039
Group 2	7.352***	0.003	7.352***	0.003	7.268***	0.019	7.068***	0.003	7.068***	0.003	6.833***	0.028
Difference	-0.084***	0.019	-0.147***	0.039	-0.063	0.043	-0.235***	0.028	-0.258***	0.039	-0.024	0.048
Explained	-0.309***	0.039	-0.183	0.115	-0.056*	0.032	-0.155**	0.064	-0.002	0.086	-0.025	0.035
Unexplained	0.224***	0.042	0.035	0.118	-0.007	0.034	-0.080	0.066	-0.257***	0.085	0.001	0.039
Explained												
Personal characteristics	-0.006	0.011	-0.031*	0.016	-0.028	0.021	-0.099***	0.008	-0.093***	0.009	0.002	0.013
Age at migration	-0.210***	0.038	-0.012	0.112	0.001	0.007	0.069	0.061	0.242***	0.082	0.002	0.010
Education	-0.082***	0.006	-0.093***	0.009	-0.002	0.009	-0.050***	0.006	-0.060***	0.009	-0.002	0.008
Occupation	-0.013**	0.006	-0.049***	0.011	-0.039**	0.017	-0.075***	0.014	-0.089***	0.020	-0.021	0.026
Year and region	0.003	0.002	0.002	0.003	0.013	0.011	0.000	0.002	-0.002	0.002	-0.004	0.008
Unexplained												
Personal characteristics	-0.392	0.819	3.763**	1.785	4.157**	1.953	1.667	1.234	-0.503	1.450	-2.166	1.893
Age at migration	0.038	0.102	0.052	0.289	0.211	0.301	-0.207	0.155	0.041	0.220	0.419	0.272
Education	-0.096*	0.050	-0.169*	0.088	-0.081	0.101	-0.058	0.078	-0.111	0.074	-0.061	0.106
Occupation	-0.029	0.074	-0.373***	0.120	-0.340**	0.142	0.138	0.091	0.019	0.096	-0.111	0.131
Year and region	0.028	0.030	-0.061	0.058	-0.102	0.065	0.036	0.033	-0.040	0.027	-0.074*	0.040
Constant	0.675	0.789	-3.176*	1.752	-3.851**	1.910	-1.656	1.267	0.338	1.422	1.994	1.896

NOTE.–Mikrozensus 2007 and 2008. Weighted numbers. Birth cohorts 1971 to 1992, i.e. 16- to 37-year-olds. Migrants who arrived in Germany between 1989 and 1994 below age 19 without a foreign schooling degree. Persons without actual participation in education. Control variables are age, marital status, number of children, school-leaving degree, vocational degree, age at migration and age at migration squared. Further control variables in the income regression are dummy variables for part-time employment, for white-collar occupation, for civil servant and occupation fixed effects. Personal characteristics comprise age, marital status and the number of children. Education comprises school-leaving degrees, vocational degrees and university degrees. Occupation comprises dummies for part-time employment, for white-collar occupations, for civil servant, and for the occupation type based on the ISCO-88 classification. Decomposition made using the user-written Stata command oaxaca (Jann, 2008).[1]Employed persons. [2]Employed persons whose main source of income are labor earnings. * p<0.10, ** p<0.05, *** p<0.01

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natives and migrants lies between 23.5 percentage points (non-German) and 27.8 percentage points (ethnic German) for men and between 4.6 percentage points (ethnic German) and 6.0 percentage points (non-German) for women. With exception of ethnic German women, these differences can almost completely be explained by differences in observable characteristics (explained part).

While there are no statistically significant differences between ethnic German and non-German migrant women, the share of non-German migrant men in white-collar occupations is significantly higher than the share of ethnic German migrant men. 86 percent of this difference can be attributed to unobservable effects, i.e. a positive behavioral effect for non-German migrants.

Finally, Table 9 presents the decomposition of the income differentials between the three population groups. The gap between the logarithm of the incomes of natives and migrants is larger for non-German migrants than for ethnic German migrants and more pronounced among men than among women.

With exception of non-German migrant women, for whom there is a negative behavioral effect, income differentials can, again, be explained in large parts by differences in observable characteristics.

In sum, these results demonstrate that poorer labor market outcomes of FSU migrants in comparison to German natives are mainly driven by endowment effects. In particular the educational attainment contributes in most specifications significantly to the explanation of diverging labor market outcomes.

While in the native-migrant comparison, the behavioral effect is often to the detriment of ethnic German migrants, the reverse is true for non-German migrants. This suggests the rejection of the initial hypothesis that ethnic German migrants might have an integration advantage over non-German migrants due to their German ancestry. The German ancestry is not captured in the observable characteristics and could – if at all – be reflected in the unexplained part of the decomposition analysis which is, however, not the case.

7 Conclusion

Based recent data from the German Mikrozensus, this study analyzes the educational attainment as well as the early labor market outcomes of young ethnic German and non-German (Jewish) FSU migrants who arrived between 1989 and 1994 in Germany. These migrants are quantitatively one of the most important migrant groups in Germany and, therefore, their successful integration is crucial for the German society and economy.

The results of this study reveal that young migrants from the FSU have not perfectly assimilated to German natives – neither with respect to the educational attainment nor with respect to labor market outcomes.

In terms of educational attainment, non-German migrants have an advantage over ethnic German migrants. A decomposition analysis reveals that this competitive edge can in large part be explained by a higher educational level of non-German migrants' parents.

The last part of this study demonstrates that this imperfect educational integration has long-term consequences on the economic integration. Both migrant groups have lower employment rates, a lower share of employed persons in white-collar occupations, and lower incomes than natives. Most of these differences can be explained by differences in sociodemographic and socioeconomic characteristics – among other things the educational attainment.

In contrast to the educational attainment, non-German migrants do not have a clear advantage over ethnic German migrants in the labor market. However, it has to be kept in mind that this is a selected sample which excludes persons who are still enrolled in education. As this share is larger among non-German than among ethnic German migrants, this could lead to a selection bias in the comparison.

In general, the results suggest that migrants cannot compensate for their early educational deficiencies on the labor market and thus cannot catch up with German natives. This has not only severe impacts for the long-term economic integration of these migrants but an unsuccessful integration also means the loss of great potential

for the German labor market and it bears the risk of becoming a future burden for the German welfare system. It seems that the extensive integration support, which was mainly oriented towards adult FSU migrants, did not contribute to a perfectly smooth integration of the children of these migrants into the German educational system. Thus, the results stress the need of an extended integration policy which focusses particularly on an early educational integration of the children of migrants. This could, for example, include a better provision of information about the German educational system for migrant parents.

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Appendix A: Additional Tables

Table A.1: Probability of Upper Secondary Education (Non-Linear)

| | PROBIT | | | | LOGIT | | | |
| | Men | | Women | | Men | | Women | |
	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE
Ethn. Germ. FSU migrant	-0.166***	0.045	-0.229***	0.040	-0.164***	0.046	-0.219***	0.041
Non-Germ. FSU migrant	-0.064	0.062	-0.172***	0.052	-0.059	0.067	-0.162***	0.055
Age	0.024***	0.000	0.022***	0.000	0.023***	0.000	0.022***	0.000
Actual school enrollment	0.493***	0.004	0.476***	0.004	0.493***	0.004	0.471***	0.004
Age at migration ≤6	0.098*	0.054	0.149***	0.053	0.098*	0.059	0.147***	0.057
Age at migration 7-10 (Ref.)								
Age at migration 11-18	-0.148***	0.038	-0.163***	0.041	-0.156***	0.038	-0.160***	0.042
Age at migration	-0.000	0.007	0.009	0.008	<0.001	0.008	0.008	0.008
Region and year fixed effects	Yes		Yes		Yes		Yes	
Pseudo R^2	0.088		0.085		0.088		0.085	
N	85,150		83,645		85,150		83,645	

| | ORDERED PROBIT | | | | ORDERED LOGIT | | | |
| | Men | | Women | | Men | | Women | |
	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE
Ethn. Germ. FSU migrant	-0.214***	0.025	-0.233***	0.027	-0.214***	0.025	-0.233***	0.027
Non-Germ. FSU migrant	-0.171***	0.033	-0.192***	0.035	-0.171***	0.033	-0.192***	0.035
Age	0.019***	0.000	0.018***	0.000	0.019***	0.000	0.018***	0.000
Age at migration ≤6	0.150***	0.042	0.176***	0.039	0.150***	0.042	0.176***	0.039
Age at migration 7-10 (Ref.)								
Age at migration 11-18	-0.171***	0.026	-0.154***	0.032	-0.171***	0.026	-0.154***	0.032
Age at migration	0.013**	0.005	0.014**	0.005	0.013**	0.005	0.014**	0.005
Actual school enrollment	0.484***	0.004	0.462***	0.004	0.484***	0.004	0.462***	0.004
Region and year fixed effects	Yes		Yes		Yes		Yes	
Pseudo R^2	0.052		0.052		0.052		0.052	
N	85,150		83,645		85,150		83,645	

NOTE.–Mikrozensus 2007 and 2008. Weighted numbers. Birth cohorts 1971 to 1994, i.e. 12- to 37-year-olds. Migrants who arrived in Germany between 1989 and 1994 below age 19 without a foreign schooling degree. Marginal effects and robust standard errors are reported. * $p<0.10$, ** $p<0.05$, *** $p<0.01$

Table A.2: Blinder-Oaxaca Decomposition – Upper Secondary Education (Non-Linear)

Group 1 Group 2	Ethn.Germ. Natives		Non-Germ. Natives		Non-Germ. Ethn.Germ.	
	Mean	SD	Mean	SD	Mean	SD
	PROBIT					
Overall						
Group 1	0.225***	0.020	0.313***	0.026	0.313***	0.026
Group 2	0.286***	0.002	0.286***	0.002	0.225***	0.020
Difference	-0.061***	0.020	0.027	0.027	0.088***	0.033
Explained	0.031	0.035	0.007	0.047	0.051*	0.027
Unexplained	-0.093***	0.036	0.019	0.046	0.036	0.027
Explained						
Personal characteristics	0.006	0.023	-0.166	5.231	0.035	0.022
Age at migration	0.055**	0.025	0.089	2.642	-0.000	0.001
Parents' education	-0.055	0.069	0.041	1.287	0.027***	0.010
Year and region effects	0.025	0.031	0.043	1.350	-0.010	0.011
Unexplained						
Personal characteristics	1.809	2.757	-8.416	48.656	2.827	5.743
Age at migration	-0.003	0.018	0.099	0.567	-0.094	0.092
Parents' education	0.004	0.013	-0.117	0.671	0.058	0.051
Year and region effects	-0.083***	0.029	-0.027	0.169	0.098	0.079
Constant	-1.820	2.750	8.481	48.962	-2.852	5.754
	LOGIT					
Overall						
Group 1	0.222***	0.019	0.311***	0.027	0.311***	0.027
Group 2	0.290***	0.002	0.290***	0.002	0.222***	0.019
Difference	-0.068***	0.020	0.021	0.027	0.089***	0.033
Explained	0.031	0.036	0.006	0.049	0.051*	0.027
Unexplained	-0.100***	0.038	0.015	0.048	0.039	0.029
Explained						
Personal characteristics	-0.003	0.039	-0.046	0.843	0.034	0.022
Age at migration	0.077	0.095	0.026	0.433	-0.000	0.002
Parents' education	-0.079	0.191	0.012	0.223	0.025***	0.010
Year and region effects	0.037	0.087	0.013	0.237	-0.008	0.010
Unexplained						
Personal characteristics	3.002	4.119	-5.077	26.105	2.433	6.961
Age at migration	-0.000	0.015	0.051	0.259	-0.091	0.094
Parents' education	0.006	0.012	-0.056	0.285	0.051	0.051
Year and region effects	-0.089***	0.031	-0.012	0.071	0.096	0.084
Constant	-3.018	4.117	5.109	26.242	-2.450	6.974

NOTE.–Mikrozensus 2007 and 2008. Weighted numbers. Birth cohorts 1987 to 1994, i.e. 12- to 19-year-olds. Persons who live in the same household as both their parents. Migrants who arrived between 1989 and 1994 and below age 7 in Germany. Standard errors are adjusted for repeated observations on family level. Decomposition made using the user-written Stata command oaxaca (Jann, 2008). * p<0.10, ** p<0.05, *** p<0.01

Table A.3: Labor Market Outcomes I

	Men						Women					
	Natives		Ethn.Germ.		Non-Germ.		Natives		Ethn.Germ.		Non-Germ.	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Employment vs. Unemployment/Not in the Labor Force												
Age	0.085***	0.004	0.144***	0.044	0.138**	0.070	0.075***	0.004	0.106**	0.048	0.045	0.083
Age^2	-0.001***	0.000	-0.002***	0.001	-0.002*	0.001	-0.001***	0.000	-0.001	0.001	0.000	0.001
Married	0.052***	0.004	0.156***	0.035	0.025	0.072	-0.043***	0.004	-0.063	0.042	-0.100	0.076
No. of children	-0.008***	0.002	-0.030*	0.017	0.042	0.035	-0.151***	0.003	-0.177***	0.022	-0.178***	0.045
Dropout, secondary	0.004	0.004	0.103***	0.030	0.018	0.049	-0.051***	0.005	-0.071*	0.038	-0.011	0.067
Intermediate (ref.)												
Upper secondary	-0.061***	0.005	-0.154**	0.066	-0.184**	0.083	-0.061***	0.005	-0.191***	0.058	-0.148	0.102
No vocational/university degree (ref.)												
Apprenticeship	0.335***	0.006	0.287***	0.042	0.213***	0.055	0.333***	0.006	0.240***	0.046	0.222***	0.070
Technical school	0.368***	0.007	0.372***	0.053	0.280***	0.080	0.361***	0.008	0.283***	0.081	-0.087	0.184
Tertiary education	0.405***	0.007	0.309***	0.100	0.476***	0.091	0.382***	0.007	0.342***	0.095	0.181	0.201
Age at migration ≤6			0.051	0.066	-0.171	0.110			0.020	0.072	0.097	0.112
Age at migration 7-10 (Ref.)												
Age at migration 11-18			-0.116**	0.051	0.036	0.081			-0.096	0.066	-0.095	0.113
Age at migration			0.001	0.012	-0.038*	0.020			-0.001	0.014	-0.027	0.021
Constant	-0.767***	0.049	-1.679***	0.614	-1.051	0.981	-0.652***	0.053	-1.128*	0.649	-0.406	1.137
Region and year fixed effects	Yes		Yes		Yes		Yes		Yes		Yes	
R^2	0.286		0.342		0.238		0.264		0.286		0.265	
F	753.860		19.637		4.653		995.386		32.626		5.829	
N	48,693		671		328		51,133		672		300	
Employment vs. Unemployment												
Age	0.032***	0.004	0.100*	0.056	0.053	0.071	0.026***	0.004	0.116**	0.054	-0.086*	0.044
Age^2	-0.000***	0.000	-0.001	0.001	-0.001	0.001	-0.000***	0.000	-0.002*	0.001	0.002**	0.001
Married	0.041***	0.003	0.104***	0.032	0.029	0.062	0.024***	0.003	0.024	0.035	0.004	0.060
No. of children	-0.010***	0.002	-0.026	0.017	0.048*	0.029	-0.028***	0.002	-0.030	0.021	0.007	0.051
Dropout, secondary	-0.045***	0.003	0.043	0.027	-0.065	0.044	-0.076***	0.004	-0.047	0.033	-0.093*	0.050
Intermediate (ref.)												
Upper secondary	0.043***	0.003	0.043	0.076	0.009	0.065	0.035***	0.003	0.034	0.023	-0.018	0.068
No vocational/university degree (ref.)												
Apprenticeship	0.157***	0.006	0.171***	0.041	0.080*	0.042	0.141***	0.006	0.084**	0.043	-0.050	0.060
Technical school	0.164***	0.006	0.239***	0.045	0.100*	0.058	0.137***	0.007	0.063	0.062	-0.042	0.061
Tertiary education	0.132***	0.006	0.054	0.104	0.171**	0.075	0.111***	0.006	0.025	0.068	0.112	0.096
Age at migration ≤6			0.018	0.066	-0.250**	0.102			0.024	0.060	0.001	0.067
Age at migration 7-10 (Ref.)												
Age at migration 11-18			-0.078*	0.046	0.091	0.071			-0.029	0.057	-0.064	0.076
Age at migration			-0.002	0.011	-0.045**	0.018			-0.012	0.013	-0.015	0.013
Constant	0.276***	0.054	-0.770	0.789	0.422	1.028	0.378***	0.055	-0.798	0.748	2.232***	0.600
Region and year fixed effects	Yes		Yes		Yes		Yes		Yes		Yes	
R^2	0.102		0.146		0.166		0.098		0.086		0.178	
F	128.576		3.804		1.374		99.432		1.873		0.782	
N	43,167		585		288		40,003		461		204	

NOTE.–Mikrozensus 2007 and 2008. Weighted numbers. Birth cohorts 1971 to 1992, i.e. 16- to 37-year-olds. Migrants who arrived in Germany between 1989 and 1994 below age 19 without a foreign schooling degree. Persons without actual participation in education. * p<0.10, ** p<0.05, *** p<0.01

Table A.4: Labor Market Outcomes II

	MEN						WOMEN					
	Natives		Ethn.Germ.		Non-Germ.		Natives		Ethn.Germ.		Non-Germ.	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
WHITE-COLLAR OCCUPATION[1]												
Age	0.058***	0.006	0.081	0.070	0.133	0.100	0.025***	0.005	-0.061	0.070	0.038	0.119
Age²	-0.001***	0.000	-0.001	0.001	-0.002	0.002	-0.000***	0.000	0.001	0.001	-0.000	0.002
Married	0.027***	0.007	0.067	0.052	-0.057	0.087	-0.017***	0.006	0.007	0.050	-0.043	0.084
No. of children	-0.023***	0.004	-0.012	0.028	-0.045	0.036	-0.035***	0.004	-0.035	0.036	-0.124**	0.059
Dropout, secondary	-0.267***	0.006	-0.142***	0.045	-0.090	0.066	-0.189***	0.007	-0.115**	0.048	-0.162*	0.084
Intermediate (ref.)												
Upper secondary	0.115***	0.007	0.299***	0.101	0.401***	0.116	-0.002	0.005	0.098	0.071	-0.025	0.111
No vocational/university degree (ref.)												
Apprenticeship	0.062***	0.008	0.100**	0.047	0.095	0.073	0.216***	0.008	0.386***	0.068	0.313***	0.098
Technical school	0.121***	0.011	0.226*	0.116	0.142	0.149	0.146***	0.010	0.515***	0.079	0.003	0.287
Tertiary education	0.135***	0.010	0.440***	0.115	0.440***	0.142	-0.026**	0.010	0.093	0.150	0.112	0.246
Age at migration ≤6 (Ref.)												
Age at migration 7-10			-0.029	0.083	0.135	0.155			-0.120	0.089	0.004	0.141
Age at migration 11-18			0.078	0.073	0.036	0.116			-0.141	0.087	-0.093	0.137
Age at migration			-0.023	0.016	-0.014	0.026			0.007	0.019	-0.020	0.025
Constant	-0.339***	0.083	-0.723	0.978	-1.584	1.409	0.382***	0.075	1.285	0.961	-0.001	1.647
Region and year fixed effects	Yes		Yes		Yes		Yes		Yes		Yes	
R²	0.135		0.195		0.213		0.100		0.189		0.241	
F	373.787		14.170		18.541		198.917		5.080		4.580	
N	40,024		516		263		37,205		423		191	
INCOME[2]												
Age	0.094***	0.006	0.127**	0.054	0.387***	0.130	0.089***	0.006	0.256**	0.099	0.110	0.116
Age²	-0.001***	0.000	-0.002**	0.001	-0.006***	0.002	-0.001***	0.000	-0.004**	0.002	-0.002	0.002
Married	0.127***	0.006	0.177***	0.038	0.155	0.110	-0.118***	0.007	-0.104**	0.051	-0.199**	0.091
No. of children	0.074***	0.003	0.086***	0.017	0.105**	0.041	-0.070***	0.006	-0.024	0.040	-0.139*	0.083
Dropout, secondary	-0.094***	0.005	-0.080**	0.035	-0.082	0.074	-0.077***	0.007	-0.001	0.054	-0.036	0.088
Intermediate (ref.)												
Upper secondary	0.057***	0.007	-0.015	0.068	-0.026	0.138	0.047***	0.007	0.239*	0.124	0.080	0.124
Part-time employed	-0.532***	0.012	-0.858***	0.211	-0.362**	0.158	-0.393***	0.008	-0.351***	0.060	-0.367***	0.101
No vocational/university degree (ref.)												
Apprenticeship	0.251***	0.010	0.135**	0.053	0.104	0.095	0.227***	0.011	0.087	0.091	0.113	0.101
Technical school	0.312***	0.012	0.178**	0.070	0.023	0.144	0.267***	0.013	0.192**	0.114	-0.255	0.263
Tertiary education	0.406***	0.013	0.435***	0.110	-0.164	0.261	0.340***	0.014	0.137	0.169	-0.065	0.215
White-collar occ.	0.009	0.006	0.016	0.041	-0.235**	0.114	0.063***	0.011	0.271***	0.087	0.052	0.113
Civil servant	0.073***	0.011	-0.017	0.097	0.256**	0.150	0.207***	0.015	0.412***	0.165	0.901***	0.267
Age at migration ≤6 (Ref.)												
Age at migration 7-10			0.064	0.059	0.198	0.151			-0.053	0.092	-0.067	0.128
Age at migration 11-18			-0.004	0.056	-0.251**	0.112			0.119	0.084	0.161	0.171
Age at migration			-0.019*	0.011	0.014	0.029			-0.029	0.018	0.030	0.028
Constant	5.387***	0.086	5.194***	0.746	1.802	1.852	5.319***	0.091	3.040***	1.367	5.129***	1.676
Region and year fixed effects	Yes		Yes		Yes		Yes		Yes		Yes	
Occupation fixed effects	Yes		Yes		Yes		Yes		Yes		Yes	
R²	0.422		0.462		0.468		0.406		0.485		0.542	
F	729.275		13.558		7.803		630.206		11.148		9.589	
N	36,641		486		246		31,522		334		163	

NOTE.—Mikrozensus 2007 and 2008. Weighted numbers. Birth cohorts 1971 to 1992, i.e. 16- to 37-year-olds. Migrants who arrived in Germany between 1989 and 1994 below age 19 without a foreign schooling degree. Persons without actual participation in education. [1]Employed persons. [2]Employed persons whose main source of income are labor earnings. * p<0.10, ** p<0.05, *** p<0.01