

## FROM EDUCATION TO WORK: A COMPARISON OF TRANSITION PATTERNS ACROSS ETHNIC GROUPS IN GERMANY

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### Abstract

The German Socio-Economic Panel (GSOEP) with its 23 waves and an enormous oversample of migrants offers a unique opportunity to observe long-term processes in Germany. This paper focuses on one such case, the labour market integration of ethnic minorities – i.e. the question if “comparable groups of workers [...] enjoy comparable opportunities and outcomes” (Böhning 1995: 2). We first briefly elaborate on the question which groups can be regarded as comparable and which characteristics should be taken into account for a comparison of ethnic groups.

Investigating unemployment patterns among young school leavers from different ethnic backgrounds, the transition does not only include classical unemployment durations but also transition periods with small jobs, etc. The so-constructed spells are analysed with (non-)proportional Cox models. In doing so, the study points out relevant factors for smoothing the transition to the first job. Segregation, human capital and social reproduction serve as theoretical background. Different types of employment taken up after are distinguished. The results reveal that the greatest ethnic differences found do not exist in the unemployment duration and the transition to work in general but in the exit strategies: A much greater ethnic difference can be observed when looking at blue versus white collar work. Not surprisingly, the importance of the covariates differs. In other words, the mechanisms for both destinations diverge considerably. Pleading for an extended analysis, it is argued that a sole indicator of unemployment duration is not always appropriate for drawing conclusions on integration.

**Keywords:** Labour market integration, ethnic minorities, school-to-work transition, Cox regression model, non-proportional hazards

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# 1 INTRODUCTION

Integration has recently received greater academic and political attention in Europe: the political discussion of “Leitkultur”<sup>2</sup> (standard culture) brought up in Germany, the growth of hostile attitudes towards immigrants and xenophobia, the success of the extreme right, racism-related violence, the terrorism debate after September 11, the 2005 riots in many French suburbs, which point to a high potential of social problems. Integration is a highly delicate but important matter which concerns not only the first generation of immigrants but also their children, the second generation.<sup>3</sup>

But referring to integration, how can integration be defined? There is no consensus on the definition of integration in the pertinent literature (Diehl and Haug 2003; Oswald 2007). In addition, “key terms in the field of migration studies (such as integration, assimilation, multiculturalism, racism, ethnicity) are also used as operative tools in national polity making with regard to immigrant issues. Therefore, the term integration bundles analytic concepts together with normative notions or idealised projections of society, which are weighted with very different emotional and attitudinal valences in different groups and contexts.” (Phalet and Swyngedouw 2003: 781). However, Heckmann (1997a) for instance sees integration as the inclusion of populations into existing social structures, the quality of these connections and the process of acquiring a membership status in the existing society. As a reciprocal process, integration differs crucially from other concepts such as assimilation or acculturation<sup>4</sup> in the sense that both immigrants and the host society, are involved. The adaptation side (minority) as well as the treatment side (majority) adjust over time (Phalet and Swyngedouw 1999).

Integration is secondly considered as a process involving different dimensions and societal spheres (Böhning 1995; Heckmann 1997a; Esser 2001). This paper focuses on the structural dimension. More specifically, it investigates labour market integration of ethnic minorities, which relates to the question if “comparable groups of workers [...] enjoy comparable opportunities and outcomes in terms of employment, remuneration, socio-economic status and other labour-market relevant characteristics” (Böhning 1995: 2). Empirical research indicates that low-skilled

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<sup>2</sup> The term has originally been coined by Tibi, B. (1998). Europa ohne Identität, Die Krise der multikulturellen Gesellschaft.

<sup>3</sup> The focus here is on ethnic minorities comprising both groups, i.e. persons with migration background.

<sup>4</sup> For a detailed discussion see for instance Esser, H. (2001). "Integration und ethnische Schichtung." MZES Working Paper(40). or Oswald, I. (2007). Migrationssoziologie. Konstanz, UVK.

immigrants face greater socio-economic disadvantages and inequalities in many countries (Martens 1973; Martens 1976; Heckmann 1997b; Schultz 1998; Castles and Miller 2003; Morissens and Sainsbury 2005). Ethnic minorities often face higher unemployment (Kogan 2004; Ray 2004; OECD 2005: 85-90) while employment is seen as a key element to avoid poverty and social exclusion. This is to a lesser extent similar for the second generation although there has been considerable improvement with regard to structural integration (Kalter and Granato 2002).

This paper investigates ethnic differences in the transition from education to employment.

First of all because, there are a few detailed studies on the ethnic differences in the transition from school or unemployment to employment in Germany (Kogan and Walter 2003; Kogan 2004; Uhlendorff and Zimmermann 2006). Previous research on unemployment of ethnic minorities in Germany attempted to explain unemployment rate differentials (Bender and Seifert 2000) and difficulties to enter the labour market (Kogan and Kalter 2003). One rich recent study by Kogan (2004) explores unemployment dynamics among different ethnic group but unfortunately only men and does not profit from the full length of the panel data available (only 1995-2000). Also, all unemployment spells are pooled without taking into account the different situation in the life course perspective. The transition to the first job for instance may follow a different pattern than repeated unemployment spells throughout the working career. Also, most studies regard individuals as unemployed if they are registered as such or regarded themselves as unemployed. This approach might not reveal the full extent of job search or waiting periods when looking at young individuals graduating from school. This is taken into account in the present study.

The focus lies on two aspects. First of all, looking at the most common labour market statistics, often breakdowns by nationality or country of birth have been added to existing labour market indicators. The gap between unemployment rates of non-EU vs. EU nationals for instance has often been used to evaluate integration. On average the unemployment of non-EU nationals is twice as high as that of EU nationals (15.8% compared to 7.1%<sup>5</sup>). Yet, in Germany and Belgium, where unemployment is on a moderate level in EU comparison, non-EU nationals have the highest disadvantage in the EU compared to nationals<sup>6</sup>: non-EU nationals are 5.3 times more often unemployed than EU nationals (EU Employment report 2003: 190). For this reason, Germany is an utterly interesting case for closer investigation of unemployment patterns across ethnic groups. But, to what extent are these numbers the result of the different profile of

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<sup>5</sup> Ireland, Italy, Luxembourg and Portugal not included.

<sup>6</sup> Data on EU-15 for 2002; Italy not available; data on non-EU nationals not available in Ireland and Luxembourg.

immigrant groups? Briefly, such strategies cannot account for the different profiles of the respective ethnic groups.

Secondly, and also related to this is the scope of labour market indicators. Focusing here on transition periods between education and employment, the paper shows that overall indicators may blur a large extent of the ethnic labour market differences by lumping together different mechanisms. The Expert Council for Immigration and Integration, which summarised the state of the arts regarding integration in Germany, agrees that a sole comparison of quotas is “little meaningful” (Sachverständigenrat für Zuwanderung und Integration 2004: 397). Therefore, two very processes are distinguished in this paper: being hired in blue collar employment versus white collar employment. As will be shown, the mechanisms of the covariates are different for both cases.

## 2 LITERATURE REVIEW

We first briefly elaborate on the question which groups can be regarded as comparable and which characteristics should be taken into account in order to explain difference in the labour market performance of ethnic groups.

### *Defining and comparing ethnic groups*

Before dwelling on the question in what matter ethnic groups should be compared, the term ‘ethnic minority’ shall first be defined. While the meaning of term minority is reduced to the numeric notion, an ethnic group is understood as

a collectivity within a larger society having real or putative common ancestry, memories of a shared historical past, and a cultural focus on one or more symbolic elements defined as the epitome of their peoplehood (Schermerborn 1970)

and may thus be compared to the concept ‘persons with migration background’ as often referred to in the German context. The operative definition of ethnicity, however, must be reduced to objective information on common ancestry (to be more precise to nationality) as other promising criteria do not show sufficient cases numbers as introduced into the GSOEP questionnaire in more recent years.

Measuring integration means comparing comparable groups (Böhning 1995). How to compare groups can be a theoretical, a methodological, an empirical or a practical question. The focus here lies on the methodological arguments. In essence, integration refers to a comparison of two different populations. Starting from an experimental design, the two groups measured should vary in the independent variable whereas all other characteristics remain equal (King, Keohane et al. 1994). This ideal case is in reality often not the case in cross-cultural studies where characteristics of the two groups are not under the control of the researcher. In other words, cross-cultural studies are often quasi experiments without random assignment to the control and treatment group, i.e. a comparison of “previously existing, intact groups” (Van de Vijver and Leung 1997). A potential source of bias is if these quasi-experimental groups differ in some aspects relevant for the research question (Phalet and Swyngedouw 1999). Van de Vijver and Leung refer to different sources of “nuisance factors threatening the validity of cross-cultural comparisons” (1997: 10). One of those relating to methods is the lack of comparability of samples due to discrepancies in some characteristics such as educational background, age, gender etc. (Van de Vijver and Leung 1997: 11) In other words the (sub)populations to be compared may differ relevantly in their composition with regard to these characteristics. Then the variation in the groups may then be (falsely) assigned to the explanatory variable even if it the phenomenon is a measurement artefact or a design effect. This can be misleading if for instance due to immigration policies the profile of the immigrants changes. The instance of a new immigration law favouring highly skilled migrants, might lead to statistics indicating an improvement of the labour market position of ethnic minorities although this might merely be an elevating effect on the average by a better educated group of immigrants. Briefly, if the characteristics are not similar across these groups, the effect of varying relevant background characteristics must be controlled for in the model.<sup>7</sup>

### ***Explaining ethnic differences on the labour market: Hypotheses***

#### **Human capital theory**

Investing in skills and abilities through education and qualifications produces gains in human capital, “the productive capacities of human beings as income producing agents in the economy” (Rosen 1998: 681). Firm-specific (intraoccupational) and general (interoccupational) human

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<sup>7</sup> A more complex approach is to match or equate the experimental and the control groups on some relevant characteristics (van de Vijver and Leung 1997; Gangl and DiPrete 2004).

capital are distinguished (Mincer 1958; Becker 1993). Because the first is not transferable to other employers, its value is lost in the case of a job change. On the other hand, general human capital, which is transferable, does not cause as high transaction costs when the employment is terminated (Becker 1993).

From the perspective of human capital theory ethnic differences in labour market outcomes can be explained with different levels of productivity. Immigrants may differ from national workers if part(s) of their education were obtained in another country. But it is mostly destination-country human capital (language, education etc.) which is most utilisable for the employer in a host country and thus of highest relevance for an individual's labour market position. Moreover, a lack of transferability of degrees and skills may lead to a lower occupational status of immigrants at the beginning of their stay in the host country (Chiswick, Lee et al. 2002). Also, language barriers may prevent newly arrived to get a job appropriate to the level of education (Berman, Lang et al. 1999; Schmid 2001). It has been shown that controlling for language proficiency, the effect of age of immigration is much weaker (Jakobsen and Smith 2003). Even though the stock of human capital of immigrant workers may tend to consist of home-country specific rather than host-country specific human capital, general and specific on the job training as well as schooling increase country-specific human capital (Becker 1993). With increasing length of stay in the host country immigrants – while working – gain host-country specific human capital (training, on the job experience). This – in theory – should help to improve their labour market position. Empirical studies indicate that the educational attainment as well as labour market outcomes are negatively related with age of immigration (for instance Schaafsma and Sweetman 2001).

By these means, second generation immigrants – immigrants' children born and/ or completing their education in the host country – accordingly should not face the discrepancies their parents were confronted with on the labour market as their proficiency in the host country's language is better and educational degrees were obtained in the host country. Although ethnic labour market inequalities are often “a matter of human capital” (Kalter and Granato 2002), many studies have found remaining unexplained differences when taking into account human capital characteristics (Phalet and Swyngedouw 2003; Rooth and Ekberg 2003). This is one of the main shortfall of human capital theory. The human capital approach has moreover been criticised for its market perspective implying equality of chances and ignores completely social structures. Besides presupposing perfect information, it does not take into account social barriers, such as segregation, discrimination, etc.

In line with studies on immigrants' labour market outcomes, education (and degree obtained), age and a first job indicator as a proxy of labour market experience as well as age of immigration are expected having a relevant impact on the duration of unemployment.

## **Theories of labour market segmentation**

Cain sums up that there is “[n]o single theory and no single taxonomy of descriptive classification [...] dealing with segmented labour markets” (Cain 1998: 285). Shared by the theories of labour market segmentation, however, is the idea that particular groups concentrate in specific labour market segments - economic sectors or professional occupations.

The dual *labour market theory* distinguishes in essence jobs in the primary sector and jobs in the secondary sector. Modern technology requires firms to offer firm-specific on-the-job training to their employees. Firms therefore select persons on account of their “trainability and future loyalty” (Cain 1998: 286). Having made investments, firms offer higher wages, tenure and internal promotion opportunities to bind their employees. Consequently, the jobs in the primary (or internal) sector have a rather stable character. On the contrary, jobs in the secondary (or external) sector are characterised by low wages, poorer career changes due to lack of promotions, instable or precarious contracts (Solé and Parella 2003). These forms of employment, in return, are often coupled with periods of unemployment. Even though both markets are interconnected, “ports of entry and exit” prohibit free movement between them and allow changes mainly at certain job classification. (Doeringer and Piore 1971: 1-2) Positions offered within the internal market are consequently mainly accessible to workers who have already gained entry. With regard to immigrant workers one could accordingly suppose that due to skill specificity and on the job training immigrant workers may remain “outsider” for a long period or may not have equal access to internal labour markets compared to native workers.

Bonacich (1975) argues in a similar way as Doeringer and Piore (1971). In her theory of *split labour markets*, she claims that “ethnic antagonism germinates in a labor market split along ethnic lines. To be split, a labor market must contain at least two groups of workers whose price of labor differs for the same work, or would differ if they did the same work.” (Bonacich 1975: 549) The two main factors which do have an impact on the initial price of labour are economic resources and motives. According to her, the poorer the economy of the immigrant's home country, the less incentives are necessary to attract them to enter the labor market. This is not necessarily the case anymore after a longer stay in the host country which may offer new

opportunities and choices to the immigrant. Bonacich claims furthermore that “[i]mmigrants may be pushed into signing contracts out of ignorance.” (Bonacich 1975: 550) The more one knows about the conditions on the labour market, the better they can protect themselves against unfavorable contracts. Finally, also political or organizational resources may protect workers to agree to disadvantageous offers.

The second important point Bonacich (1975) mentions are motives. She argues that temporary workers, who do not have the intention to stay permanently in the labour market, will have lower wages because (1) they are not interested in joining labour organizations as long-term benefits from such memberships are not expected to affect them anymore and (2) temporary workers tend to accept more frequently less desirable working conditions as the work is not seen permanent. The lower the living standard in the home country, the more are ethnic minorities willing to accept the lower pay. Bonacich argues further that the motives of temporary workers may be fixed or supplementary income or fortune seeking. Looking for a quick opportunity to make some additional money, persons with the first motivation withdraw from the labour market when the desired income is reached while persons with the latter intention, who may have migrated far, are willing to accept a lower living standard in order to profit maximally from the additional fortune in the home country. These workers do often receive lower remuneration, work longer and are convenient for the employer (Bonacich 1975: 551).

On the contrary to other economic theories including human capital theory, differences in skills are not directly relevant for the wage differentials and the creation of the split labour market. Whereas the argumentation holds true for the first generation it becomes difficult to apply the same logic for the second generation. Segregation theory alone does not hold as explanation. Chances in the education system and on the labour market depend for instance also on the capital transmitted across generations.

In conclusion, we assume that transition patterns differ largely from the overall picture when looking at specific sectors. The analysis distinguishes therefore also between blue and white collar employment.

## **Intergenerational transmission of capital**

Theories on inter-generational mobility investigate the impact of background factors of the preceding generation on the structural performance. Three mechanisms can be distinguished: direct transmissions from parents to their children (parental capital), the impact of the ethnic

groups (ethnic capital) and neighbourhood effects. With regard to the first mechanism, the family maximises utility across generations and structural outcomes can therefore not only be seen from an individual perspective (Borjas 1993). In other words, for explaining inequalities, also the investments of parents into their children play an important role (Becker and Tomes 1979). Looking at labour market outcomes of the children, Nielsen et al. (2001) find in their study on Denmark that the parental capital and neighbourhood effects (which they found strongest among the three mechanisms) has the greatest impact on the educational attainment and a lesser extend on the waiting tim for the first job after leaving school. Later labour market performances seem less influenced by intergenerational transmissions. In another study on the US, Borjas finds transmission coefficients of 0.27 for education, 0.20 for occupational attainment (Hodge-Siegel-Rossi prestige score) and 0.35 for wages (Borjas 1992: 137ff). Essential is moreover the argument that the exclusion of the parental background can lead to an overestimation of alternative explanations such as the impact of education (Becker 2001).

In addition to parental capital, Borjas (1992) included ethnic capital – i.e. the quality of the ethnic environment a person is raised in - into this perspective. The average skill level of the ethnic group has according to Borjas an important positive impact for all three performance measures. For educational attainment, parental background is found as important as the group-specific ethnic capital for the performance of the next generation. With regard to occupational attainment, the transmission coefficient increases to 0.6 of their children when ethnic capital is included. In other words, ethnic capital is even more important than the parents' occupation. With regard to wages, the transmission coefficient increases to 0.63 when ethnic capital is taken into account (Borjas 1992: 136).

Another finding of Borjas' study (1992) is that the intergenerational transmission is stronger between the first and the second than between the second and the third generation. This is not surprising for Borjas “[a]s social, cultural, and economic assimilation occurs across generations [and] the importance of the ethnic enclave diminishes” (Borjas 1992: 143). Also, the impact of ethnic capital is more pronounced when *both* parents are foreign born although the evidence is not always significant due to a small sample size as Borjas argues.

The focus of this study is limited to parental capital (and thus not on ethnic capital). As described in other studies, the first generation immigrants who came to Germany in the frame of guest worker schemes have a very different educational profile compared to Germans (Heckmann 1999; Münz and Ulrich 2000; Bade and Oltmer 2004; Ray 2004). Turkish guest workers for instance came to a large extent from rural areas and with low or very low education, let alone German language skills. Both immigrants and host society did not expect the guest

workers to stay longer, so that investments from both sides into (host country specific) human capital were rather limited. Later immigrant cohorts tend to have more favourable skills for the German labour market.

Therefore, we suppose that Turkish are the most disadvantaged group and that the effect of parental educational background can largely account for differences with regard to the transition from education to work.

## **Theories of discrimination**

Theories of labour market discrimination on the contrary assume that the evaluation of work or potential does not result from productivity estimations but from discrimination (Phelps 1972; Becker 1973; Aigner and Cain 1977; Arrow 1998; Mueser 1998). In other words, individuals are treated differently with regard to certain characteristics which are not directly relevant on the labour market. Different theoretical approaches can be distinguished. According to Becker's *racial taste theory* (1973), discriminatory tastes can cause lower relative wages for ethnic minorities if employers are willing to counter economic loss due to imperfect occupation of a post (Becker 1973; Mueser 1998). However, according to Becker, market competition prevents discrimination in the long-term perspective (Becker 1973; Mueser 1998). As discrimination does exist, this perspective has often been criticised as unrealistic: Becker's "discrimination model predicts the absence of the phenomenon it was designed to explain" (Arrow 1972: 172).

In contrast to Becker's racial tastes, other authors argue that *economic profit* is the main motive for discrimination. Krueger for instance shows that the income of a majority (Whites) can increase if it discriminates against a minority (Blacks), "even if white capitalists had no personal taste for discrimination." (1963: 483) She limits her analysis of labour market discrimination to a situation where Whites maximise the income of the whole White group rather than their personal income only. This restriction has been criticised as unconvincing from the economic perspective, as it is not plausible why a capitalist would maximise the group's welfare instead of his own gain. Eventually, Krueger can neither explain the persistence of discrimination in the long-run.

*Statistical discrimination* (Phelps 1972; Arrow 1973) as another type of discrimination implies that the evaluation of individuals with distinct ethnicity is related to overall characteristics of that particular ethnic group (stereotypes). Arrow (1973) that the process of obtaining all relevant information on a worker's productivity is costly. In the screening process, the employer aiming at reducing these costs may substitute the missing information by estimations of group

productivities, for instance from his own previous experience or stereotypes. Skin colour, race, an alien appearing name etc. may serve as a proxy for information not available (Phelps 1972: 659). In a study on Belgium, Van den Cruyce (2000: 352) for instance finds statistical discrimination against allochthonous candidates particularly in highly competitive positions which demand a rather common profile is present.

Yet another approach focuses on *institutional or structural discrimination*. Briefly, it investigates if policies and institution produce discriminatory effects. This important aspect of ethnic disadvantage is pointed out by Arrow (1998: 93): Even if wage differences between ethnic groups are little, discrimination can take place in the form of complete exclusion from certain areas. In particular the criterion ‘nationality/citizenship’ may grant or prevent access to certain rights. In contrast to the human capital approach, theories of discrimination could explain differences in labour market performances for the first as well as the second generation of immigrants.’

Also Borjas and Goldberg (1978) have expanded on Becker’s work. In their theory of *biased screening* they criticise that Becker but also Arrow assumed a perfect screening process and ignore the possibility that the reliability of the screening as prior productivity estimation might differs across ethnic groups. Considering the case of “cultural bias” in the test, the authors show that a test more reliable for Whites than for Blacks results overall in hiring ‘better’ White workers than Black workers and thus in wage differentials favouring Whites.

Despite the theoretical fertility of discrimination theories, discrimination or disadvantages in general remain empirically and statistically complex to prove. Unless the study follows an experiental design, the question “[h]ow much of the observed inequalities is due to discrimination [...] and how much of it is due to other determinants” (EUMC 2003: 51) cannot be appropriately answered if not all relevant variables are measured or included into the model. Therefore, also here, discrimination will receive minor focus in the following. However, if there was no discrimination, ethnic difference regarding the transition to employment should be explained with the variables included into the analysis.

### **Germany’s institutional background: Ethnic minorities between education and the labour market**

Looking now on the transition to employment in Germany, first a few institutional features – concerning the education system and welfare state – which are relevant for school leavers will be very briefly highlighted. Germany is a country with a highly standardised vocational training system which is also marked by low selection procedures within the system (stratification)

(Allmendinger 1989). There are two tracks in the higher German education system: the classical schooling of higher education (college-university) and the vocational training. As the main way of learning an occupation, the latter combines part-time practical work in a company and part-time schooling in vocational schools (dual system) in a time frame of usually three to four years. While this highly institutionalised system ensures the quality of the qualification, it has been criticised for its inflexibility for careers, which do not follow the standard tracks (Weymann 1999). Another drawback is the rather slow adaptation to the need of the labour market, for instance with regard to technological developments. The difficulty for apprentices to find employment in the occupation trained for has been increasing in the last two decades (see for instance Bundesagentur für Arbeit 2006a). It moreover has been pointed out that school leavers with lower degrees (*Hauptschule*/extended elementary school or *Realschule*/intermediate school) have poorer chances to enter apprenticeships in the banking, insurance or tourism sector (Barabasch and Lakes 2005) while ethnic minorities are overrepresented among pupils leaving school without any or low degrees (Sachverständigenrat für Zuwanderung und Integration 2004: 264).

Continental welfare states such as Germany as recognising its responsibility to protect its inhabitants against the major work- and family-related risks. In Germany, most of the social services are linked to or even conditioned on employment (Esping-Anderson 1990). Ethnic minorities (immigrants and their dependents) are granted full access to the welfare system. With regard to the transition from school to work, unemployment policies are of central meaning. In order to be eligible to unemployment benefits, a person must (1) have registered with and regularly consult the employment office, (2) be actively searching for employment and willing to take up a suitable job, and, most importantly, (3) the person must have been employed for at least 12 months prior to registration (Bundesagentur für Arbeit 2006b). Although school leavers are by definition excluded from this service, there is no special provision for school leavers. Yet, work, which has been part of an apprenticeship, is recognised to some extent. Also, one of the tasks of the German employment office is also to assist school leavers in their job search. If one is not eligible for unemployment benefits, persons are covered by social assistance if they are at least of age 18. Also, until age 25 youth are not recognised as independent, which entails them/ their parents under certain conditions to a prolongation of family related benefits (*Kindergeld*) if they do not have an own income.

### 3 DATA, METHODS & OPERATIONALISATION

#### *Data*

As a *process*, integration must be appropriately reflected in the research design and the data. Long-term monitoring is possible with panel data where respondents are followed over several years. In this way, retrospectively bias answers can be avoided. Another strength of longitudinal analysis is to provide evidence for causality.<sup>8</sup> It is easily possible model designs which ensure that the cause precedes the consequence in time given there is a statistical association between cause and consequence, which is not spurious (Blossfeld, Golsch et al. 2007).

The analysis of this paper is based on the German Socio-Economic Panel (GSOEP), a representative panel survey of private households in Germany which started in 1984 and continues until today. Not only covers the GSOEP a wide range of topics and allows for detailed investigation of labour market status (available on yearly and monthly basis) and human capital variables essential for measuring structural integration but also a large set of variables on the migration background are available in the GSOEP. More importantly, persons with migration background are oversampled in the GSOEP. The first migrant sample B of 1984 takes into account the after-war immigration history and the related large population of ‘guest workers’ in Germany at that time. Another migrants sample D was included in 1994/1995 to account for the changes in the immigrant population. Also, the refreshment sample F includes migrants. (Haiskens-Denew and Frick 2005) The dataset is thus well-suited to analyse ethnic minorities.

The data used in this paper were extracted using the Add-On package PanelWhiz v1.0 (Oct 2006) for Stata. PanelWhiz was written by Dr. John P. Haisken-DeNew (john@panelwhiz.eu). The following authors supplied PanelWhiz SOEP Plugins used to ensure longitudinal consistency, John Haisken-DeNew (1), John P. Haisken-DeNew (2), Markus Hahn and John P. Haisken-DeNew (28). The PanelWhiz generated DO file to retrieve the SOEP data used here and any Panelwhiz Plugins are available upon request. Any data or computational errors in this paper are my own. Haisken-DeNew and Hahn (2006) describes PanelWhiz in detail. (see Haisken-DeNew and Hahn 2006)

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<sup>8</sup> However, it must be noted that causal inferences cannot be directly made from empirical data (including event history records) but must be theory driven (Blossfeld 2007).

## ***Event history analysis***

An event history is a longitudinal record of changes in variables and their timing (Blossfeld, Golsch et al. 2007). One advantage of this method is that all information available, including the exact event time, is used in the analysis (Hinde 1998). Secondly, the assumption that the chances of making a transition (hazard) are constant over analysis time can be relaxed. Moreover, it is a straight forward method to deal with two typical characteristics in longitudinal analysis: censoring (withdrawals) and time-varying explanatory variables (Allison 1984: 11).

The hazard and survival function are key means to investigate transitions with event history techniques. The discrete time hazard describes the (conditional) probability that an event (“failure”) will occur at a particular time  $j$  to a particular individual  $i$ , given that the individual is at risk at that time, i.e. has not experienced the event before (Allison 1984). For censored observations the event time cannot be precisely estimated; it is only known that the event time is greater than the censoring time (Cox 1972: 187). For continuous-time the hazard  $\lambda(t)$  must not be interpreted as a probability, but as a (time-specific failure) rate measuring the “conditional probability of event occurrence *per unit of time*” (Singer and Willett 2003: 474):

$$\lambda(t) = \lim_{\Delta t \rightarrow 0^+} \frac{pr(t \leq T < t + \Delta t \mid t \leq T)}{\Delta t} \quad (4.1)$$

with  $T$  denoting the failure time (Cox 1972: 187). The continuous-time survivor function  $F(t)$  refers to the probability of surviving at least until time  $t$  or, in other words, that the event time of an individual  $i$  exceeds time  $t$  (Singer and Willett 2003: 472, Cox 1972: 187):

$$F(t) = pr(T \geq t) \quad (4.2)$$

## **Cox proportional hazards model**

As parametric models are based on strong underlying assumptions with regard to the shape of the hazard function (which should therefore be justified by proper theoretical expectations), a semi-parametric approach, the Cox regression, seems of advantage here. While it has been shown that both methods yield similar results (Box-Steffensmeier and Jones 2004), the latter has the advantage of leaving the baseline hazard rate unparameterised and avoiding thus problems due to

misspecification as for instance when omitting an important variable. Briefly, no particular form of the duration dependency is thus assumed.

The Cox proportional hazards model to estimate the impact of the covariates can be formulated as:

$$\log h(t_{ij}) = \log h_0(t_j) + \beta_1 X_{1ij} + \beta_2 X_{2ij} + \dots + \beta_k X_{kij} \quad (4.3)$$

or antilogged:

$$h(t_{ij}) = h_0(t_j) e^{\beta_1 X_{1ij} + \beta_2 X_{2ij} + \dots + \beta_k X_{kij}} \quad (4.4)$$

with  $\log h_0(t_j)$  as the unspecified general baseline log cumulative hazard function. The effects of variables can easily be interpreted with *hazard ratios*<sup>9</sup>:

$$\frac{H(t_{ij})_{COVARIATE=1}}{H(t_{ij})_{COVARIATE=0}} = \frac{H_0(t_j) e^{\beta_1}}{H_0(t_j)} = e^{\beta_1} \quad (4.5)$$

The Cox regression is a proportional hazards model based on continuous time and assumes thus that the probability of events happening at the same time is minuscule and expecting thus *no tied events*.<sup>10</sup> The estimates are obtained by the Breslow method handling tied events as if the order of the events is not known.

A second important assumption regards the shape of the different sub-populations. It assumes that the log hazard functions have an identical general shape, i.e. are proportional. (Singer and Willett 2003; Blossfeld, Golsch et al. 2007) There are several covariates in the model whose effect could plausibly vary over time. In order to deal with such violations of the *proportionality*<sup>11</sup> assumed interactions with time have been introduced in the Cox model (Box-Steffensmeier and Jones 2004: 132).

Thirdly, *unobserved heterogeneity* can seriously harm the quality of the analysis and in particular a proper interpretation of the results. For this study, it is assumed that all heterogeneity is observed

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<sup>9</sup> When a hazard ratio is greater than one, the hazard increases with the covariate, leading to shorter survival times. On the contrary, if the hazard ratio is less than one, the opposite is the case: the risk decreases leading to longer survival times. Finally, if the hazard rate is not significantly different from one, no substantive effect of the respective covariate can be concluded.

<sup>10</sup> Such “ties” occur thus when “the probability that two or more individuals share an identical event time is [not] infinitesimally small.” (Singer and Willett 2003: 314) In such cases, discrete-time methods are often recommended. Nevertheless, it has been shown that both methods obtain very similar results. In a nutshell, the Cox model is often preferred over other alternatives, in particular when the baseline hazard is not of central interest (Box-Steffensmeier and Jones 2004: 85ff).

<sup>11</sup> I.e. that „each predictor has an identical effect in every time period under study” (Singer and Willett 2003: 451), or in other words, that the effect is independent of the duration.

and can be ascribed to the covariates in the model. Also it should be remarked that *independence of the competing statuses*<sup>12</sup> is desirable (Hinde 1998), whereas labour market transitions cannot completely avoid the problem of dependent transition rates.

### ***Construction of the sample and operationalisation***

According to Singer and Willett (2003: 310) the definition of three features is crucial to the event history approach: the beginning of time, the target event, and the metric for clocking time. “The “beginning of time” is a moment when everyone in the population occupies one, and only one, of the possible states.” (Singer and Willett 2003: 311) Here, the date leaving school represents the starting point at which individuals enter the risk set. For persons entering vocational training or military service the entry into the risk set was postponed until the end of these spells. At this moment, all persons<sup>13</sup> enter the labour market and therefore the same status: being ‘unemployed’ searching for the first job. In this way, also left-censoring could be avoided.

How are the transitional periods constructed? As mentioned earlier, the job search period here does not only include ‘classic unemployment’. The rich information on the labour market status in the GSOEP provides for the opportunity to take also bridging periods (other activities than work or inactivity) into account.<sup>14</sup> Moreover, also the individuals who directly make the transition to work, i.e. those without search spell between school and employment, are incorporated into the model.

Gaps are item or unit non-responses. As these can be due to a missing questionnaire in one year, gaps of 12 months and more are regarded as exiting the labour market as their durations cannot be reconstructed accurately. Worth to note it, that roughly half of persons with gaps of one year and more re-enter the educational system. All spells or gaps of up to three months between two different education spells were closed and regarded as education while leave of more than 3 months from the educational system was regarded as a potential job seeker. If the gaps were larger than 11 months, cases were regarded as censored as it cannot be assured that the person is searching for a job.

“Event occurrence represents an individual’s transition from one “state” to another “state”” (Singer and Willett 2003: 310), which must be accurately defined. The target event is employment,

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<sup>12</sup> As Hinde (1998) puts it, “[t]he independent death rate from a specific decrement is the death rate which we would observe if the other, competing, decrements did not exist.”

<sup>13</sup> Persons leaving directly after school into inactivity were disregarded.

<sup>14</sup> The GSOEP distinguishes the following activity statuses: full-time/ part-time employment, other type of employment, different types of inactivity and education, unemployment, “other”, and gaps.

full-time or part-time, while all other events such as education or inactivity including censoring are treated as exits from the risk set. As later unemployment periods are not investigated, the transition to work is regarded here as a non-repeatable event or a single episode case (Blossfeld, Golsch et al. 2007). In a first step, a so-called two-state model is applied to investigate the transition from unemployment to the first job. In a second step, the results shall be investigated in more detail by applying competing risk methods to analyse the transition to different types of job. Blue and white collar jobs are distinguished.

With regard to the competing risk analysis, a few limitations should be pointed out. First, for a very large share of all persons who make the transition to employment the type of employment is unknown. This is predominantly the case where the stated employment on a monthly basis does not coincide with the yearly employment information. If a person finds employment, it does not necessarily mean that this is the dominating labour market status throughout the respective calendar year. Persons working for a short period only are filtered out and not asked employment related questions if their yearly status is other than employed. This is particular the case for school leavers entering employment in the last years of the year. Because of this reason, the labour market status from the following year was imputed in case of missing information. Yet, the improvement was modest: still 55.1% (=2274/4127) of the type of employment remain missing.

The metric of time, thirdly, describes the units in which the history is recorded (Singer and Willett 2003: 313). The event time or *duration* describes then the ‘distance’ (in months) from graduation until the time of event occurrence, i.e. finding a job, is measured in months. Since labour market status is reported monthly in the SOEP for 23 years (276 months), continuous methods (here: Cox regression) are applied.

It should be acknowledged that the so constructed sample holds the risk of overestimating the duration of transitions as there are transition periods where school leavers may not actively look for a job. Yet, on the other hand, not including these spells would – in our view – underestimate and not realistically reflect the transition from education to work.

How have the main variables been operationalised? Although the so-constructed sample includes a large number of school leavers (N=9,121), a great share do not directly enter the labour market (inactivity or censored cases). Persons, who do either find directly employment or do enter a transition period, are included in the analysis leading to an initial sample size of 5,103 cases. (see table below)

**Table 1: Status after leaving school**

<i>Status after leaving school</i>	<i>Freq.</i>	<i>Percent</i>
Full-time work (direct transition) <sup>°</sup>	<b>2,310</b>	25.33
Part-time work (direct transition) <sup>°</sup>	<b>582</b>	6.38
Unemployment/ transition period <sup>°</sup>	<b>2,211</b>	24.24
Retired	40	0.44
Maternity leave	65	0.71
School	299	3.28
Gap	169	1.85
Censored	3,445	37.77
<b>Total</b>	<b>9,121</b>	<b>100.00</b>

Note: ° included into the sample of transition periods; Source: GSOEP, waves A-W, unweighted data

Due to the limited number of cases when differentiating between first and second generation, the groups were collapsed into the following *ethnic minorities*:

**Table 2: Sample frequencies of ethnic groups (nationality)**

<i>Nationality</i>	<i>Freq.</i>	<i>Percent</i>
German	4,294	84.28
Turkish	317	6.22
(Ex-) Yugosl.	143	2.81
Mediterranean	284	5.57
Other	57	1.12
<b>Total</b>	<b>5,095</b>	<b>100.00</b>

Source: GSOEP, waves A-W, unweighted data

For explaining the duration of unemployment and the chances of a transition into employment, the following covariates<sup>15</sup> are included in addition:

- *Sex* (Male = reference category)
- *Married* (No = reference category)
- *Children in the household* (No = reference category versus yes)
- *Age, age squared*
- *Education*
  - 1) No/ general education (reference category)
  - 2) Vocational education (middle vocational, vocational plus A levels, higher vocational)
  - 3) Higher education
- *Degree*
  - 1) Secondary School (reference category)
  - 2) Intermediate School/ technical School
  - 3) Upper Secondary

<sup>15</sup> No time-varying covariates are included as the observed spells are rather short.

- 4) Other Degree/ dropout, no School/ no School Degree
- *First job* (Yes = reference category)
- *Age at immigration*
  - 1) German ‘native’ and German born (reference category)
  - 2) Foreign nationality & born in Germany
  - 3) Immigrated before age 6
  - 4) Immigrated age 6-10
  - 5) Immigrated age 11-16
  - 6) Immigrated age 17+
- *Region* (West Germany = reference category versus East Germany)
- *Historical period*
  - 1) 1983-85
  - 2) 1986-90
  - 3) 1991-95
  - 4) 1996-2000
  - 5) 2000 and later (reference category)
- *Father’s education*
  - 1) Secondary (reference category)
  - 2) Intermediate/technical education
  - 3) Higher education
  - 4) No degree/school

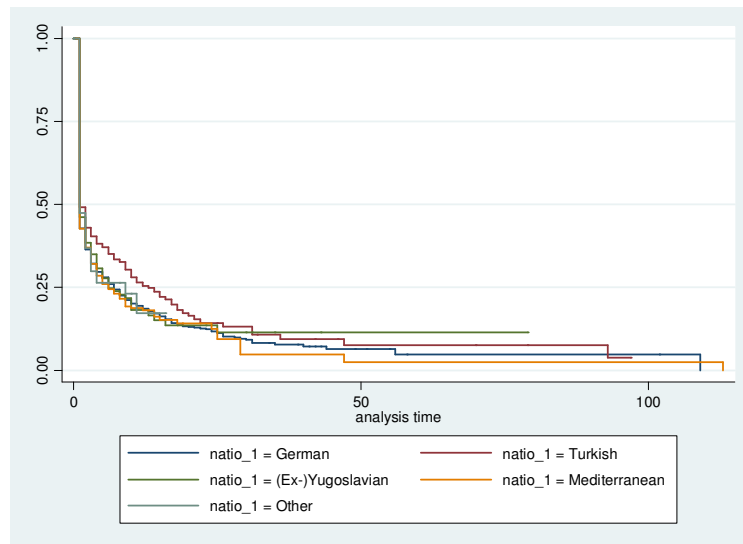
## 4 ANALYSIS OF THE TRANSITION FROM EDUCATION TO THE LABOUR MARKET

In this section, first, a model for the transition to work in general (full-time and part-time) is estimated, which does not reveal – in our view – the real extent of ethnic differences on the labour market. In line with segmentation theories, two models for a single cause-specific hazards are fitted in a next step; one for the transition to blue collar and one for the transition to white collar employment.

Looking now at a few descriptive statistics on the labour market entry of ethnic minorities, the results suggest first of all that the ethnic groups differ considerably. The Kaplan-Meier graph below displays the group-specific survivor function for different nationalities. Ethnic differences are evident in the case of Turkish nationals, who have, compared to the majority and other ethnic

groups, higher survival estimates indicating a slower transition to work after leaving school. Mediterranean and (Ex-)Yugoslavian minorities have on average transition rates similar to German natives. (compare figures below)

**Figure 1: Kaplan-Meier survival function for the transition to employment, by nationality**



Source: GSOEP, waves A-W, unweighted data

By the same token, introducing nationality into a *proportional Cox model*<sup>16</sup> estimating the transition from education to work in general yields significant ethnic differences only for the Turkish minority (output not shown). When including nationality into the model, Turkish minorities' chances to enter employment are on average 14% lower than those of German nationals. However, when including education into the model, the differences between Turkish and German nationals turn insignificant. Other ethnic differences appear not relevant.

Now, this could be a rather positive result with regard to structural integration of ethnic minorities but this overall measure does not really reflect the real extent of the ethnic differences on the labour market. The quality of the job taken up after is relevant for investigating inequalities as the literature review has shown. One way to dichotomise labour market outcomes is the distinction between blue and white collar employment. Difference labour market mechanisms become already visible when looking at the group-specific survival estimates after 3, 6, 12 and 24 months in the table below. The distinction between blue and white collar work is also related to other quality characteristics. The mean of employment duration after the transition for instance is much shorter for those who take up a blue collar job than those who find white collar employment (30.8 vs. 39.9 months).

<sup>16</sup> Moreover, neither country of origin nor age of immigration are relevant.

**Table 3: Kaplan-Meier survival estimates after 3, 6, 12 and 24 month of unemployment, by nationality**

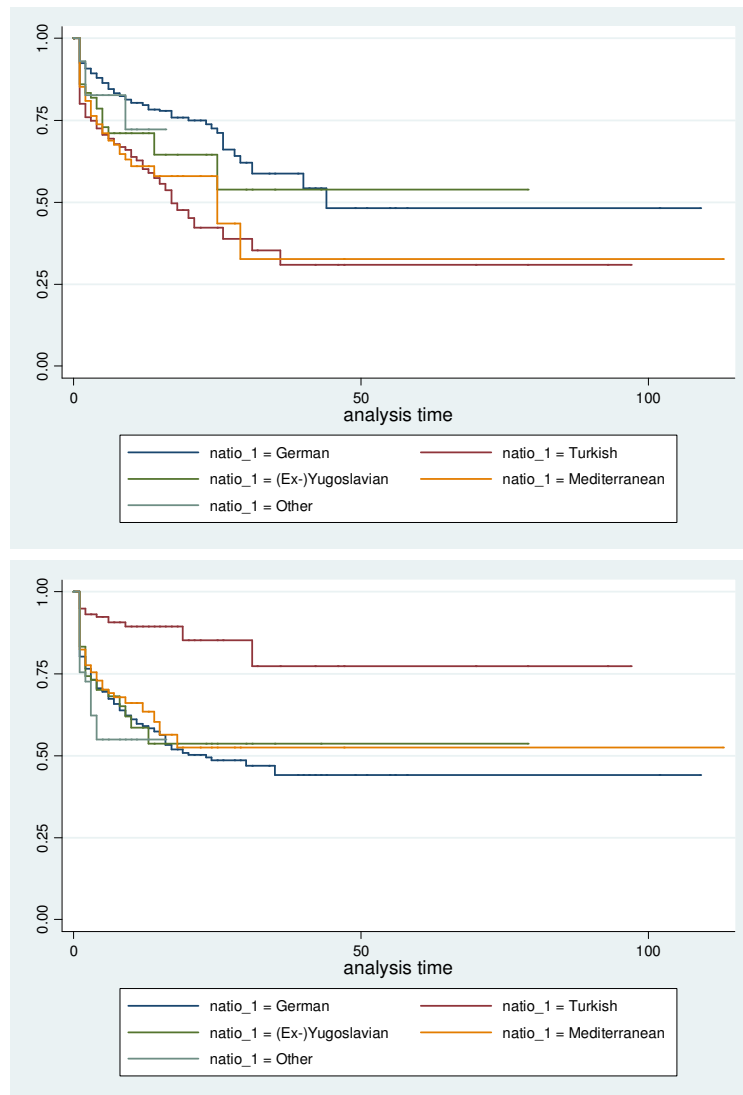
<i>Time</i>	<i>Transition to employment in general</i>		<i>Transition to blue collar employment</i>		<i>Transition to white collar employment</i>	
	<i>Survivor Function</i>	<i>Std. Error</i>	<i>Survivor Function</i>	<i>Std. Error</i>	<i>Survivor Function</i>	<i>Std. Error</i>
German						
3	0.3216	0.0072	0.8932	0.0057	0.7329	0.0078
6	0.2592	0.0070	0.8449	0.0084	0.6736	0.0096
12	0.1862	0.0075	0.7975	0.0125	0.5911	0.0138
24	0.1164	0.0092	0.7256	0.0258	0.4863	0.0237
Turkish						
3	0.4038	0.0276	0.7490	0.0264	0.9313	0.0160
6	0.3507	0.0270	0.6934	0.0302	0.9065	0.0210
12	0.2541	0.0266	0.6023	0.0390	0.8940	0.0242
24	0.1430	0.0276	0.4232	0.0590	0.8514	0.0475
(Ex-)Yugos.						
3	0.3497	0.0399	0.8189	0.0361	0.7304	0.0435
6	0.2476	0.0364	0.7097	0.0521	0.6816	0.0490
12	0.1811	0.0355	0.7097	0.0521	0.5852	0.0667
24	0.1358	0.0350	0.6452	0.0777	0.5365	0.0769
Mediterr.						
3	0.3204	0.0277	0.7636	0.0307	0.7541	0.0296
6	0.2442	0.0256	0.6888	0.0375	0.6909	0.0355
12	0.1798	0.0250	0.6104	0.0473	0.6343	0.0464
24	0.1252	0.0276	0.5799	0.0539	0.5246	0.0697
Other						
3	0.2982	0.0606	0.8265	0.0638	0.6227	0.0764
6	0.2632	0.0583	0.8265	0.0638	0.5494	0.0832
12	0.1727	0.0670	0.7232	0.1116	0.5494	0.0832
24	.	.	.	.	.	.

Source: GSOEP, waves A-W, unweighted data

The table above indicates that all ethnic groups make a much faster transition to blue collar work. ‘Other’ nationals approach the German majority closest but should be interpreted with caution due to low case numbers.

Turkish minorities have very poor chances to make the transition to white collar work, not only compared to the majority but also to other ethnic groups. Mediterranean and (ex-) Yugoslavian minorities are quite similar to Germans. The survival function is also illustrated in the graphs below.

Figure 2: Kaplan-Meier survival function for the transition to blue collar employment, by nationality



Source: GSOEP, waves A-W, unweighted data

The ethnic differences are next tested in a two cause-specific proportional Cox regression (see output below). Remarkable is first of all that the three largest ethnic minorities identified differ significantly from German natives with regard to blue collar work: the chances to take up blue collar work are between 1.7 and 2.3 times higher for ethnic minorities than for the host society. On the other hand, only Turkish seem disadvantaged with regard to white collar employment. Their chances are extremely low relative to German natives (75% lower).

What are the reasons for these large differences on the labour market? Can these differences be explained with the different background characteristics of ethnic minorities (human capital, parental capital, socio-demographic controls)? In a next step, we control for the different

background characteristics of the ethnic groups (see annex for the description of the main variables by ethnic group). This will be done for blue and white collar employment separately.

**Table 4: Cause-specific Cox regression for the transition to blue and white collar employment, Model 1**

	<i>Blue collar employment</i>		<i>White collar employment</i>	
	<i>Haz. Ratio</i>	<i>P&gt;χ</i>	<i>Haz. Ratio</i>	<i>P&gt;χ</i>
Nationality (German=ref.)				
Turkish	2.325284	0.000	0.249	0.000
(Ex-) Yugosl.	1.70298	0.004	0.930	0.656
Mediterranean	2.073028	0.000	0.905	0.409
Other	1.250703	0.530	1.278	0.277
N of observ.	5095		5095	
N of failures	693		1315	
Log likelihood	-5459.7432		-10646.301	
df	4		4	
Prob > chi2	0.000		0.000	
AIC	10927.49		21300.6	
BIC	10953.63		21326.75	

Source: GSOEP, waves A-W, unweighted data

### ***The transition to blue collar employment***

The table below depicts the results of three Cox regressions for the transition to blue collar work. The last model is a non-proportional one as it includes time-dependent covariates. Not all of the results shall be discussed in length here, as (1) they mainly turn out as expected and (2) the focus lies on ethnic differences in relation to the above mentioned theories.

It is remarkable that even in Model 2, which does control for some background variables, ethnic difference shrink but still remain substantial. Age, sex, and education (controlling for first job, historical period and region) can apparently not account for different labour market outcomes. Including then the age of immigration into Model (3) renders nationality insignificant. It can thus be concluded that there are differences between the first generation immigrants and the majority while those between the second generation and the majority can be neglected but that length of stay in the host country has a positive effect as expected. Note, however, that in the sample only those are included who have been the German education system already.

**Table 5: Cox regression for the transition to blue collar employment, Models 2-4**

	<i>Model 2</i>		<i>Model 3</i>		<i>Model 4</i>	
	<i>Haz. Ratio</i>	<i>P&gt;χ</i>	<i>Haz. Ratio</i>	<i>P&gt;χ</i>	<i>Haz. Ratio</i>	<i>P&gt;χ</i>
<i>Nationality</i> (German=ref.)						
Turkish	<b>1.669</b>	0.000	1.216	0.389	1.385	0.168
(Ex-) Yugosl.	1.115	0.585	0.786	0.385	0.737	0.319
Mediterranean	<b>1.444</b>	0.008	1.144	0.598	1.304	0.322
Other	1.532	0.279	0.742	0.548	0.691	0.460
Age	1.224	0.001	1.214	0.002	1.116	0.119
Age square	0.997	0.002	0.997	0.003	0.998	0.175
Sex (Male=ref.)	0.498	0.000	0.536	0.000	1.291	0.102
Children (no=ref.)	0.901	0.238	0.857	0.086	0.928	0.428
<i>Education</i> (no/elem.=ref.)						
Voc./middle educ. (2)	1.125	0.231	1.164	0.186	1.686	0.000
Higher educ. (3)	0.561	0.003	0.457	0.001	0.600	0.090
Female*edu. (2)			0.791	0.216	0.630	0.022
Female*educ. (3)			1.390	0.284	0.861	0.659
<i>Degree</i> (secondary=ref.)						
Intermed/technic,	0.578	0.000	0.594	0.000	0.569	0.000
Upper secondary	0.211	0.000	0.222	0.000	0.203	0.000
Other	1.038	0.767	0.969	0.809	0.930	0.594
<i>Age of immigration</i> (German nat/born=ref.)						
Foreign nat/born in G.			1.339	0.250	1.287	0.341
Immigr. < age 6			<b>1.660</b>	0.047	1.792	0.025
Immigr. age 6-10			1.368	0.212	1.482	0.121
Immigr. age 11-16			<b>1.678</b>	0.017	1.522	0.080
Immigr. > age 16			<b>2.624</b>	0.001	2.521	0.003
First job (yes=ref.)	0.378	0.000	0.376	0.000	1.029	0.828
<i>Hist. Period</i> (>2000=ref)						
1983-1985	0.808	0.238	0.810	0.264	0.522	0.003
1986-90	0.781	0.049	0.797	0.082	0.754	0.032
1991-1995	0.650	0.001	0.681	0.003	0.620	0.000
1996-2000	0.774	0.030	0.774	0.031	0.777	0.042
East Germany (West=ref.)	0.997	0.981	1.057	0.650	1.518	0.001
<i>Father's education</i> (secondary=ref.)						
Intermediate/technical					0.656	0.002
Higher educ.					0.609	0.013
No degree/ school					0.951	0.753
<i>Time-dependent cov.</i>						
t*sex					0.781	0.000
t*edu2					0.910	0.000
t*edu3					0.913	0.164
t*first job					0.858	0.000
N of observ.	4095		4047		3860	
N of failures	611		601		567	
Log likelihood	-4431.29		-4336.76		-3841.37	
Df	19		26		33	
AIC	8900.583		8725.516		7748.734	
BIC	9020.615		8889.465		7955.262	

Source: GSOEP, waves A-W, unweighted data

As expected, all the human capital variables included contribute to explaining the differences in the group-specific hazard rates. The best model is the one including also interactions with analysis time (duration) and parental background characteristic. The father's educational

attainment has a negative effect on the transition to blue collar work. In other words, the higher the education of the father, the lower the hazards of making the transition to blue collar work. This is similar to the effect of one's own education and degree attainments. It must be kept in mind, that the transitions to blue and white collar work are in this type of models not estimated simultaneously and that estimates depend thus on the transition to white collar employment as well. The mother's education was also significant but not jointly. The stronger effect was thus kept in the model.

The interaction between time and education finally suggests that with more time passing for high(er) educated the chances to take up blue collar work decrease, they might exit into white collar jobs. In the beginning however, medium-level education is an advantage increasing the hazards of finding blue collar employment.

Interesting to note is also the result that the transition to blue collar work is also made much quicker if it is a person's first job. However, looking at the duration dependent effect, labour force experience does not make a difference in the reference period (first months) but does so in with longer unemployment. With time the hazards decrease for those who do not enter their first job.

### ***The transition to white collar employment***

The table below gives the results of the Cox regression for the transition to white collar employment. It is striking that the effects of the covariates are very different.

Surprisingly, the initial ethnic differences found in Model 1 even increase when taking into account basic background characteristics (Model 2). Now, also (ex-)Yugoslavian minorities differ significantly from Germans. On the contrary to blue collar work, age of immigration does not play an important role for finding white collar employment. In Model 3, ethnic differences completely disappear. Interesting as well is that the parental background is not relevant in the transition to white collar jobs – on the contrary to what has been discovered for the blue collar sector.

Interestingly, school leavers entering the first job again make much faster transition to white collar jobs. In modelling the transition to white collar work, also the marital status is relevant. Being married increases the hazards in general by 65%, while it reduced the chances for women to get hired in the white collar sector ( $1.647 \cdot 0.417 = 0,687$ ). Having children again reduced the hazards considerably. With regard to education, also gender differences can be found: higher

education increases the hazards for white collar employment by 140% but only half of it for women. Note, however, that there is a large positive main effect for women, which can compensate largely for these effects.

**Table 6: Cox regression for the transition to white collar employment, Models 2-4**

	<i>Model 2</i>		<i>Model 3</i>		<i>Model 4</i>	
	<i>Haz. Ratio</i>	<i>P&gt;χ</i>	<i>Haz. Ratio</i>	<i>P&gt;χ</i>	<i>Haz. Ratio</i>	<i>P&gt;χ</i>
<i>Nationality</i> (German=ref.)						
Turkish	<b>0.534</b>	0.003	<b>0.549</b>	0.039	0.724	0.262
(Ex-) Yugosl.	<b>1.438</b>	0.034	1.427	0.194	1.382	0.225
Mediterranean	1.152	0.268	1.143	0.595	1.338	0.241
Other	0.870	0.596	1.271	0.461	1.113	0.746
Age	1.566	0.000	1.540	0.000	1.489	0.000
Age square	0.993	0.000	0.994	0.000	0.994	0.000
Sex (Male=ref.)	1.618	0.000	2.538	0.000	2.581	0.000
Married			1.647	0.000	1.405	0.004
Female*Married			0.417	0.000	0.522	0.000
Children	0.744	0.000	0.728	0.000	0.730	0.000
<i>Education</i> (voc./middle=ref.)						
No/general educ. (1)	0.678	0.000	0.524	0.001	0.973	0.900
Higher educ. (3)	1.675	0.000	2.409	0.000	3.258	0.000
Female*educ.(1)			1.318	0.215	1.262	0.296
Female*educ(3)			0.525	0.000	0.495	0.000
<i>Degree</i> (secondary=ref.)						
Intermed/technic,	1.662	0.000	1.562	0.000	1.462	0.001
Upper secondary	1.065	0.591	1.027	0.822	0.931	0.550
Other	1.049	0.769	1.094	0.610	1.086	0.641
<i>Age of immigration</i> (German nat/born=ref.)						
Foreign nat/born in G.			1.011	0.965	1.016	0.951
Immigr. < age 6			0.993	0.978	1.161	0.560
Immigr. age 6-10			0.872	0.586	0.891	0.629
Immigr. age 11-16			0.655	0.099	0.619	0.071
Immigr. > age 16			0.747	0.262	0.746	0.274
First job (yes=ref.)	0.547	0.000	0.546	0.000	1.213	0.024
<i>Hist. Period</i> (>2000=ref)						
1983-1985	0.608	0.001	0.583	0.000	0.641	0.002
1986-90	0.879	0.147	0.855	0.082	0.893	0.209
1991-1995	1.006	0.940	0.967	0.690	1.005	0.955
1996-2000	0.946	0.484	0.931	0.375	1.044	0.594
East Germ. (West=ref.)	0.712	0.000	0.724	0.000	0.741	0.000
<i>Time-dependent cov.</i>						
t*first					0.819	0.000
t*educ. (1)					0.840	0.000
t*educ. (3)					0.882	0.000
N of observ.	4095		4045		4045	
N of failures	1185		1170		1170	
Log likelihood	-8873.198		-8702.717		-8470.986	
df	19		28		31	
AIC	17784.4		17461.43		17003.97	
BIC	17904.43		17637.98		17199.43	

Source: GSOEP, waves A-W, unweighted data

## 5 CONCLUSION

In contrast to similar studies, the transition period in this study does not only include classical unemployment durations but also transition periods with small jobs, etc. Moreover, different destinations are taken into account. Investigating these transition patterns among young school leavers from different ethnic backgrounds, the study discussed the factors smoothening the transition to the first job. Segregation, human capital and social reproduction were found relevant for investigating the transition from education to work. It could be shown, that the ethnic differences in labour market outcomes are largely underestimated when looking solely at unemployment or the transition time. The quality of employment reveals greater differences. However, most of them can be explained with socio-demographic, human capital and parental background characteristics. The mechanisms, however, differ between blue and white collar employment.

For the transition to blue collar work, the differences measured with nationality could be explained. On the other hand, ethnic differences reappeared in the variable age of immigration. While foreign nationals born in Germany are not significantly different from German natives, ethnic minorities who immigrated later are more likely to become employed as blue collar workers. If this reflects mainly language skills and knowledge about the host country remains open. Even school leavers who immigrated before age 6 and have thus completed their whole education in Germany have significantly higher transition rates to blue collar employment. On the contrary, the transition to the white collar sector: Neither ethnicity nor time of immigration nor parental background has finally an impact on the transition from education to white collar employment.

### Acknowledgements

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## ANNEX

**Table 7: Description of key variables, by nationality**

<i>Over</i>	<i>Mean</i>	<i>Std. Err.</i>	<i>[95% Conf.</i>	<i>Interval]</i>
Age				
German	23.00512	.0806892	22.84694	23.16331
Turkish	20.23344	.148893	19.94154	20.52533
_subpop_3	20.8156	.2969966	20.23336	21.39784
Mediterran~n	21.08803	.1987494	20.69839	21.47766
Other	27.07018	1.014883	25.08057	29.05978

<i>Over</i>	<i>Mean</i>	<i>Std. Err.</i>	<i>[95% Conf.</i>	<i>Interval]</i>
Education				
German	1.988313	.011667	1.96544	2.011185
Turkish	1.463333	.0366667	1.39145	1.535217
_subpop_3	1.585714	.0555138	1.476882	1.694546
Mediterran~n	1.72	.0427086	1.636272	1.803728
Other	2.363636	.1112029	2.145629	2.581644

<i>Over</i>	<i>Mean</i>	<i>Std. Err.</i>	<i>[95% Conf.</i>	<i>Interval]</i>
Sex				
German	1.475547	.007622	1.460605	1.49049
Turkish	1.40694	.0276357	1.352762	1.461118
_subpop_3	1.48227	.0422311	1.399478	1.565061
Mediterran~n	1.482394	.0297035	1.424163	1.540626
Other	1.491228	.066805	1.360261	1.622195

<i>Over</i>	<i>Mean</i>	<i>Std. Err.</i>	<i>[95% Conf.</i>	<i>Interval]</i>
Year of immigration				
German	1987.439	.5155932	1986.426	1988.452
Turkish	1977.791	.4622748	1976.883	1978.7
_subpop_3	1978.164	.9793441	1976.24	1980.088
Mediterran~n	1975.868	.8304178	1974.237	1977.5
Other	1991.857	1.186155	1989.527	1994.187

<i>Over</i>	<i>Mean</i>	<i>Std. Err.</i>	<i>[95% Conf.</i>	<i>Interval]</i>
Age of immigration				
German	11.34694	.5668407	10.23341	12.46047
Turkish	8.98773	.4044728	8.193163	9.782297
_subpop_3	8.47541	.7353697	7.030813	9.920007
Mediterran~n	7.881579	.755092	6.398238	9.364919
Other	19.48571	1.902838	15.74768	23.22374