Education and Immigrant Integration

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Chapter 1

Introduction

Motivation

Immigration, accompanied by a rise in ethnic, cultural and religious diversity, is transforming Western European societies. Many societies that previously appeared homogeneous, have become host countries to large numbers of immigrants and their descendants. Germany, along with France and the UK, is among the larger Northern European economies to have experienced large-scale immigrant inflows in the late 1950s to early 1970s, and has since accumulated sizeable immigrant populations. Similar and even larger immigrant inflows have been more recently experienced by Southern European countries such as Spain and Italy. Under the pressures of ongoing globalization, population aging and increasing skill shortages, ethnic diversity will likely continue to rise and gain increased importance in the coming years.

Therefore, integration of immigrants and their children, including their participation in the host country labor market and society in general, is one of the major challenges and features prominently in the policy agendas of most Western European governments. However, despite the success of immigrant integration being vital for ensuring social cohesion in the host countries, there is a clear lack of long-term strategies to enable migrants to act as autonomous, productive members of the host society, and to facilitate the acceptance of immigrants by the host-country population. Moreover, public discourse and political debate in recent years has revealed substantial uncertainties surrounding the trajectories of immigrants and their children in contemporary Western European societies. The existence of a linear process of socio-economic integration into the mainstream societies has been called into question. In Germany, the debate intensified in 2010 with the publication of the

controversial book "*Deutschland schafft sich ab*" ("Germany Does Away With Itself") by Thilo Sarrazin, claiming a lack of integration effort by the immigrants themselves.

Against this background, the challenge for economic research is to provide economic reflections and sound empirical analysis of the factors potentially hindering immigrant families' long-term economic progression in the host country economy. Indeed, a more profound understanding of these mechanisms may contribute to the adoption of effective policy initiatives, where necessary. Of central importance is the educational performance of second-generation immigrants, namely, in a broad sense, children who were born in the host country to immigrant parents or immigrated with their families at young age.

Immigrant youth occupy a key position with respect to the future of immigrant groups and the host societies in which they reside. Acknowledging integration as a gradual process spanning generations rather than years, this next generation, which has been growing up in their parents' receiving country, has a far greater capacity for integration than their parents' generation. Moreover, the children of immigrants now represent over one third of the child population in Germany (Statistisches Bundesamt, 2010), and, for example, also already constitute roughly one tenth of the child population in Italy (Hernandez et al., 2010). Given such magnitudes and considering labor market challenges such as skill shortages and population aging that most Western economies will be confronted with in the near future, it is crucially important that second-generation immigrants are able to successfully contribute to the host country labor markets. However, this group performs poorly compared to natives according to most measures, such as education, earnings or employment (Algan et al., 2010). The integration of the second generation matters from both an economic and social perspective. Failed integration may prompt economic as well as social exclusion of this population group, potentially leading to social unrest and conflict, exemplified by recent riots in the UK and France involving mostly second- or third-generation youth.

Given that education is widely perceived as the main channel through which immigrant families could economically catch up with the native population over generations, the specific topics addressed in this thesis evolve around educational attainment. Not only is the educational achievement of the second generation crucially important for immigrant families' long-term economic advancement, it is also a key indicator for the success of the economic, social and cultural integration of the parental generation in its own right.

This dissertation project aims to contribute to an understanding of immigrant families' long-term integration into host country structures, with a focus on issues related to educational attainment. The thesis consists of three self-contained chapters, each addressing a particular aspect related to potential barriers to immigrant integration and the role of education therein. All chapters utilize applied empirical methods to analyze the research question at hand. Chapter 2 explores the intergenerational effects of parental ethnic identity on the next generation's human capital accumulation. Chapter 3 investigates the persistent education gap between native and migrant children at several stages in the host-country education system. Complementary to the above, Chapter 4 is concerned with the flipside of immigrant integration, namely the determinants of the native populations' attitudes toward immigrants and immigration. Its relevance in the context of this thesis is twofold. First, immigrant integration is not a one-sided process. Anti-immigrant attitudes and discriminatory behavior by the host-country population constitute an important barrier to the social and economic integration of individuals with a migration background. Second, if governments are willing to encourage immigration and immigrant integration into host country labor markets, it is important to understand how public opinion on these topics is shaped. The issues addressed in this dissertational thesis are scientifically and politically highly relevant in light of the current public debates and growing immigrant population shares in most Western economies. The motivation and contributions for each study and key results are described in greater detail below.

All analyses are based on the German Socio-Economic Panel (SOEP), a representative longitudinal study of private households in Germany that started in 1984. Owing to its sizeable stock of second-generation immigrants, Germany provides an excellent laboratory for the research questions addressed in this work. Furthermore, this dataset is unique in providing repeated information on immigrants over a long period of time, given that the resident migrant population, i.e. mainly the traditional five immigrant nationalities in Germany (Greek, Italian, Spanish, Turkish, and Yugoslavian), has been over-sampled since the initiation of the survey. Importantly for this study, the data includes rarely available information on immigrants' ethnic self-identification and natives' attitudes toward immigration and immigrants. Analysis is also based upon the so-called youth questionnaire, that was introduced in 2001 and contains unique retrospective information on young first-time respondents' school careers, including, for example, teacher recommendations and grade repetition. Moreover, the longitudinal character of the SOEP offers the possibility

to study immigrant integration in an intergenerational context, and to control for unobserved heterogeneity, which is an important issue for the analysis of attitudinal measures.

Contribution

Chapter 2, entitled *"Parental Ethnic Identity and Educational Attainment of Second-Generation Immigrants"* investigates whether a lack of cultural integration is rightly blamed for hindering immigrant families' economic progression. More specifically, I explore whether there are in fact long-term economic or social consequences by investigating intergenerational effects of parental ethnic identity on the next generation's human capital accumulation. Are there detrimental effects when immigrant families preserve their original culture? To what extent is it beneficial for the next generation if immigrant parents assimilate to the culture of the host country? This study is motivated by a recently increased research interest in the concept of ethnic identity among economists.[1] The major focus of the previous empirical literature in this context has, however, been on the outcomes of first-generation migrants.[2] To my knowledge, there are to date no studies that have analyzed how immigrants' emotional attachment to the mainstream culture of the host country (majority identity), or how the ties to their ethnic background culture (minority identity) may influence educational attainment among their offspring. Chapter 2 represents hence the first study to examine such long-term consequences of immigrants' ethnic identity from an intergenerational perspective.

Parental input is generally important for child education. In the immigrant context, parents' ability to assure their children's educational success in the host country system is likely to be positively affected by strong ties to the host society and familiarity with its educational system. However, there are mixed stories concerning how parents' ties to their original culture might affect child outcomes: while cross-cultural psychological literature suggests that children might generally profit from

[1] Special issues of the *Journal of Population Economics* (Volume 20, Issue 3, 2007), *Research in Labor Economics* (Volume 29, 2009) and *The Economic Journal* (Volume 120, Issue 542, 2010) document the rising research interest in the economics of ethnic identity. See also a thematic focus on ethnic identity in the *Journal of the European Economic Association* (Volume 6, Issue 2-3, 2008), as well as Constant et al. (2009).

[2] Exceptions are Casey and Dustmann (2010) and Nekby and Rödin (2010), who consider second-generation outcomes. However, in contrast to the analysis presented here, they do not directly investigate the role of parental identity on second-generation education from an intergenerational perspective.

strong parental ethnic identities (see, e.g., Portes and Rumbaut, 1990; Olneck, 1995; Phinney et al., 2001), economic literature suggests possible adverse effects (Chiswick, 2009).

In this study, I employ a two-dimensional concept of ethnic identity to investigate the relative importance of parental affiliation to the host-country society and their ties to the background culture. At the same time, I explore the respective roles of immigrant fathers and mothers. This aspect is particularly interesting in the light of recent empirical evidence on the educational performance of children of native-migrant parent couples. For example, van Ours and Veenman (2010) find the combination of a native mother and immigrant father most beneficial for child outcomes, suggesting that mothers' affiliation with the host country might be of special importance.

The main results reported in this chapter indicate that the chances of a second-generation immigrant child attending a higher level secondary education increases with the strength of the mother's self-identification with the host country and also with the father's affiliation to the culture of origin. Accordingly, there seem to be no detrimental effects of immigrant families preserving their immigrant identity. The findings suggest that mothers might play indeed a special role with respect to host country affiliation. Additional findings show that the maternal German identity effect is closely related to mothers' German language proficiency, thus supporting the view of mothers as active managers of their children's scholarly career. The main results hold despite controls for ethnic group, family background and time spent in the host country. They are also robust when employing sibling fixed effect techniques that carefully control for time-invariant unobserved heterogeneity in family background characteristics. The results in this chapter indicate that immigrant families do not necessarily face a trade-off between retaining ties to their original ethnic culture and long-term economic success in the host country.

Chapter 3, *"Decomposing the Native-Migrant Education Gap"* (with Annabelle Krause and Ulf Rinne), examines the factors that constitute differences in education outcomes between native and migrant children by evaluating the persistent education gap at several stages in the host-country education system. Despite second-generation migrants growing up in the host country, their performance still persistently lacks behind the educational outcomes of native children in many Western European countries (see, e.g. Algan et al., 2010; OECD, 2006; Schneeweis, 2011). Previous research provides mixed evidence on whether these disparities are mainly driven by compositional differences in terms of socio-economic family background

or whether migrant-specific factors such as language problems or discrimination additionally play a significant role.[3]

This chapter contributes to the literature by examining the educational performance of very recent cohorts of second-generation pupils and their native peers, exploiting unique data from the SOEP youth questionnaire, which has rarely been used before. The methodological approach pursued in this analysis treats the issue at hand as a decomposition exercise. Using linear decomposition methods and matching techniques, we explicitly decompose the native-migrant education gap into a part that can be attributed to compositional differences in socio-economic family background between the two groups and another part that remains unexplained. The specific research question investigated in this chapter is whether there would still be a difference in education outcomes if the group of migrant children had similar parental background and household characteristics to native children. This analysis provides important insights concerning the extent to which migrant-specific factors may contribute to native-migrant differences in educational outcomes. In contrast to the previous literature, we are able to follow the same pupils throughout their progression in the German educational system around and after their transition from primary into secondary schooling. Besides teacher recommendations provided at the end of primary school, we also investigate the native-migrant gap in actual enrollment and track attendance throughout secondary education. Hence, we are able to contribute to the literature from different angles in terms of methods, outcomes and data.

The main results of this chapter show that native and migrant children with the same socioeconomic family background face similar difficulties at all examined stages in the German education system, consequently leaving little room for migrant-specific factors. When accounting for differences in socioeconomic background, we find that migrant pupils are as likely as native children to receive recommendations or enroll at any secondary school type. Also the gap in educational attainment at age 17 appears to be entirely explained by differences in socioeconomic family background. These results are particularly important in the German context, suggesting the importance of tackling the more general inequalities reproduced by the German education system.

Chapter 4, *"The Effects of 9/11 on Attitudes Toward Immigration and the Mod-*

[3]For example, OECD (2006) find migrant-specific factors to be important beyond socioeconomic background. Another part of the literature (e.g. Entorf and Tatsi (2009) or Lüdemann and Schwerdt (2013) in the German context) argues that it is predominantly the disparity in socioeconomic status that leads to native-migrant education gaps.

erating Role of Education", explores the relevance of 'non-economic' factors such as cultural prejudice and intolerance in determining anti-immigrant and anti-immigration attitudes. While it is commonly suggested that economic rationales such as labor-market competition between workers of similar skill level represent the main explanation for negative views toward immigrants and immigration, recent literature emphasizes the role of racial prejudice or cultural concerns.[4] However, empirical evidence on non-economic factors has relied to date exclusively on cross-sectional analysis. Results might therefore be affected by omitted variable bias. Another problem, that must be faced when trying to recover the relevance of non-economic factors in attitude formation is the difficulty in isolating peoples' non-economic from economic concerns.

To shed light on the relevance of cultural norms and beliefs in the formation of public attitudes, this chapter exploits the quasi-experimental setting of the 9/11 terror attacks in 2001 under the premise that these events represent an unanticipated, external and non-economic shock to immigration-related attitudes. Does such a major shock affect individuals' views toward immigrants and immigration in the absence of economic threat? This chapter investigates the responsiveness of the German native population to the major event of the 9/11 terror attacks in the US in terms of individual attitudes toward immigration as well as concerns over xenophobic hostility. Exploiting random interview timing in the SOEP throughout the year 2001, I am able to identify the immediate causal impact on post-9/11 respondents. Moreover, the longitudinal structure of the data allows controlling for individual heterogeneity and thus avoiding omitted variable bias. Additionally, I explore potential heterogeneous effects across certain subgroups of the population, and particularly the potential role of education in moderating the negative terrorism shock. To my knowledge, this is the first study to provide causal evidence of 9/11 effects on immigration-related attitudes and to explore heterogeneous effects in this context. In fact, it is the first to study non-economic determinants of immigration-related attitudes in a longitudinal setting.

The results indicate a non-negligible shift to more negative attitudes toward immigration among German residents as a result of the terrorist attacks. At the same time, the attacks resulted in decreasing concerns over hostility toward foreigners. Consequently, the results confirm the importance of cultural prejudice in driving

[4]See, for example, Card et al. (2012), Dustmann and Preston (2007) and Hainmueller and Hiscox (2007, 2010). Bauer et al. (2000) stress the role of public concerns over social tensions to be a 'non-economic' driver of anti-immigration attitudes.

immigration attitudes and emphasize that public shifts can be potentially triggered by major events, such as those of 9/11. The findings further suggest that a negative reaction in terms of attitudes toward immigration is mainly prevalent among respondents with below-average education levels, while no significant attitude shift is found among highly educated individuals. These results are consistent with a moderating role of education in absence of a realistic economic threat. Yet, in terms of attitudes toward xenophobic hostility, findings indicate that high-and low-educated respondents reacted equally strong to the attacks, which in turn casts some doubt on a universal moderating role of education.

Chapter 2

Parental Ethnic Identity and Educational Attainment of Second-Generation Immigrants*

2.1 Introduction

Based on the theoretical framework by Akerlof and Kranton (2000), who introduce identity as a part of an individual's utility function, the concept of ethnic identity[1] is attracting increasing research interest from economists.[2] A number of empirical studies show that how immigrants relate to the majority society and the culture of their countries of origin may affect aspects of their economic behavior, such as labor force participation (Constant and Zimmermann, 2009; Battu and Zenou, 2010), job search and occupational prestige (Pendakur and Pendakur, 2005), income (Nekby and Rödin, 2007) and homeownership (Constant et al., 2009). However, most of

*This chapter is based on the discussion paper "Parental Ethnic Identity and Educational Attainment of Second-Generation Immigrants" (see Schüller, 2011).

[1]Following Phinney and Ong (2007), ethnic identity is defined as a part of social identity, which in turn is defined by Tajfel (1981) as "that part of an individual's self-concept which derives from [his] knowledge of [his] membership of a social group (or groups) together with the value and emotional significance attached to that membership" (p.255). Unlike ethnicity, ethnic identity is thus chosen by individuals themselves. Ethnicity, on the other hand, is assigned to an individual either by birth or by others on the basis of ethnic background or phenotype (Phinney and Ong, 2007).

[2]Special issues of the *Journal of Population Economics* (Volume 20, Issue 3, 2007), *Research in Labor Economics* (Volume 29, 2009) and *The Economic Journal* (Volume 120, Issue 542, 2010) document this increasing research interest. See also a thematic focus on ethnic identity in the *Journal of the European Economic Association* (Volume 6, Issue 2-3, 2008) as well as Constant et al. (2009).

the research on ethnic identity has so far focused on the economic outcomes of first-generation immigrants. Only a few studies have specifically considered second-generation immigrants (e.g. Casey and Dustmann, 2010; Nekby and Rödin, 2010) or investigated the relation between ethnic identity and education (e.g. Zimmermann et al., 2008; Nekby et al., 2009).

The present analysis adds to this literature by exploring the role of parental ethnic identity in second-generation immigrants' educational attainment in Germany. Investigating this intergenerational link is crucial for two reasons. First, the recent public debate has revealed the importance of examining whether there are in fact long-term economic or social consequences stemming from immigrants being more or less attached to their ethnic background culture or the mainstream culture of the host country. Recurrent controversy in Germany over citizenship tests, a German leading culture or the failing of multiculturalism[3] affirms a persistent public uncertainty of whether immigrants should culturally assimilate or whether cultural diversity be embraced. Second, the children of immigrants form a large and increasing share of the Western European population, and so are of growing importance for European labor markets. Whether or not these second-generation immigrants are able to successfully contribute to the host country economy depends largely on the amount of human capital they accumulate in the host country educational structures. Yet this group performs poorly compared to natives according to most measures, such as education, earnings or employment (Algan et al., 2010). It is thus important to understand the factors associated with second-generation immigrants' educational performance.

Economic literature generally stresses the importance of parental input in children's education (e.g. Becker and Tomes, 1976; Becker, 1981). Parents care about their children's economic success and can exert influence by investing in their "skills, health, learning, motivation, 'credentials', and many other characteristics" (Becker and Tomes, 1986, p.5). In the context of immigrant parents, however, it is likely that the way parents influence and assure their children's educational success is affected by their degree of cultural integration, i.e. both their sense of belonging to the host country society (majority identity) and the extent to which they stick to the cultural traits of their home countries (minority identity).

Immigrant parents with a stronger affiliation to the host country might be better

[3]After an extended debate on how to define a German leading culture that immigrants would need to assimilate to, the discussion on how to deal with Germany's immigrant population was again accelerated in 2010 with the publication of the controversial book "*Deutschland schafft sich ab*" ("Germany Does Away With Itself") by Thilo Sarrazin promoting anti-immigrant attitudes.

able to motivate their children effectively simply because they have a better command of language, are more familiar with the local schooling system and are less handicapped by cultural differences, e.g. when dealing with teachers. Additionally, as suggested by sociological literature, parents with a stronger sense of belonging to the majority culture are more optimistic about their children's future opportunities for economic advancement in the host country, which in turn alters their incentives for educational investments (Kao and Tienda, 1995).

There are mixed stories as to how immigrant parents' affiliation to their background culture may matter for educational investments in the next generation. On the one hand, sociological and cross-cultural psychology literature suggests that children may profit from a strong parental minority identity because the affirmation of one's cultural heritage increases individual well-being, self-esteem and is thus beneficial for a child's educational attainment (e.g. Portes and Rumbaut, 1990; Olneck, 1995; Phinney et al., 2001). On the other hand, economic literature points to possible adverse effects. The model of ethnic identity developed by Chiswick (2009) illustrates that parents who are deeply rooted in the culture of their country of origin are likely to specialize in the development of children's ethnic skills, which, depending on the cultural tension between minority and majority culture, might come at the expense of investments in general human capital.

The main scope of this chapter is to analyze whether, and to what extent, immigrant parents' ethnic identity, defined as both the parental affiliation to the host country society and their ties to the background culture, affects immigrant children's educational paths. Of specific interest is the relative importance of parental majority and minority identity. The cross-cultural psychological literature indicates that, in analogy with the concept of two-dimensional acculturation by Berry (1997), ethnic identity can be seen as "two dimensions of group identity that vary independently; that is, each identity can be either secure and strong or underdeveloped and weak" (Phinney et al., 2001, p.495). I therefore attempt to identify separately the effects of parental minority and majority identity. Similarly, I employ separate measures of maternal and paternal identities in order to investigate their respective roles. In a way, this contributes to recent literature studying the effects of interethnic marriages on child outcomes (Furtado, 2006; van Ours and Veenman, 2010). For example, van Ours and Veenman (2010) find that the combination of a native mother and an immigrant father is most beneficial for a child's education suggesting that mothers' affiliation with the host country and familiarity with its educational system might be of special importance.

Germany, as a country with a sizeable stock of second-generation immigrants, provides an excellent case study. In 2007, children of immigrants constituted roughly 20 percent of the German population under the age of 20 (Statistisches Bundesamt, 2009).[4] Moreover, within Germany's early tracking school system, already the transition to secondary school appears to constitute a significant barrier to immigrant children's educational progression.[5] In fact, in a system which imposes critical choices early in a child's educational career, a great weight falls on the knowledge, support and strategizing of the parents.

I start by estimating basic probit models of the probability that an immigrant child in Germany is tracked either into intermediate or upper level secondary school and find that both parental German and minority identity seem to matter significantly. Both kinds of identities appear to be associated with an increase in a child's probability to be placed in a higher secondary schooling track. Moreover, I find the positive impact of German identity to work exclusively through mothers, while the beneficial effect of minority identity is specific to fathers. These results are robust when controlling for family background characteristics and introducing ethnicity fixed effects. Also, the observed pattern is apparent in both specifications that include all identity measures together and specifications that include only one identity measure at a time. In order to assess whether parental identity effects are driven by unobserved time-invariant family characteristics, I then take advantage of the relatively large number of siblings in my sample of immigrant children. Estimating models that allow for family fixed effects, I find a remarkably similar pattern to my basic results.

Additional tests indicate that the positive effect of maternal German identity can to a great extent be explained by mother's command of the German language, while neither father's German or minority language ability accounts for the beneficial impact of paternal minority identity on educational attainment. These findings generally suggest differential roles of fathers and mothers in contributing to their child's education. While paternal minority identity appears to be a stabilizing factor per se, with respect to immigrant mothers it may be rather their host country-specific skills, such as language skills, that help them navigate through the German

[4]These are mainly the children of "guestworker" immigrants who arrived during the 1960s and 70s from Turkey, the former Yugoslavia, and other southern European countries, including Greece, Italy, and Spain, and more recently immigrants from Eastern Europe.

[5]The design of the German school system places pupils into different secondary schooling tracks at around the age of ten. Immigrant children in Germany are generally over-represented in the lowest secondary schooling track and relatively few are found in the academically oriented school type (Riphahn, 2005).

education system.

The chapter proceeds as follows: Section 2.2 reviews previous related literature. Section 2.3 introduces the data and provides descriptive evidence on the relationship between parental ethnic identity and secondary school placement. Section 2.4 presents the empirical findings, and Section 2.5 summarizes the results and concludes.

2.2 Related Literature

The literature on the educational attainment of second-generation immigrants is large and growing (Borjas, 1992; Djajić, 2003; Nielsen et al., 2003; van Ours and Veenman, 2003; Colding, 2006; Algan et al., 2010; Belzil and Poinas, 2010; Cobb-Clark and Nguyen, 2012). Several studies on Germany document a persistent educational gap between native and immigrant children (Haisken-DeNew et al., 1997; Gang and Zimmermann, 2000; Riphahn, 2003, 2005; Algan et al., 2010; Luthra, 2010; Krause et al., 2012). This literature mainly focuses on the role of immigrant parents' lower average human capital endowment in explaining these gaps. A further question is whether in the immigrant context, there are specific patterns of parental investment in the next generation's education. Several migrant-specific factors have been suggested to play a role in explaining differences *within* the immigrant population. Chiswick (1988) suggests that culturally motivated differences in family background may be responsible for different returns to schooling across ethnic groups. Borjas (1992), on the other hand, emphasizes that the performance of the next generation not only depends on parental skills but also on the average human capital endowment of their respective ethnic group ('ethnic capital'). Gang and Zimmermann (2000) suggest the degree of immigrant parents' 'assimilation' to the host country culture plays a role.

The most examined measure of 'assimilation' is the immigrant families' duration of stay in the host country assuming that language and cultural barriers, as well as immigrant-specific information deficits, decrease with the time spent in the host country. In the German context such time aspects of parental integration are generally found to be positively associated with children's educational attainment (Haisken-DeNew et al., 1997; Riphahn, 2003, 2005). However, less attention is given to measures that reflect the immigrant families' emotional attachment to German society or the ties to their own culture. Concerning the former, Luthra (2010) employs parental naturalization as a measure of immigrant families' active integration

into German society, but finds no significant relationship to child education.[6] With respect to their own culture, Haisken-DeNew et al. (1997) find children of parents who prefer ethnic over German food or strongly consider returning to their home country are more likely to end up in lower educational tracks.

I use here direct measures of parental self-assessed ethnic identity to analyze the potential role of immigrant parents' identification with either the host country and the minority culture in determining the second generation's school performance. This intergenerational relationship has, to my knowledge, yet to be directly investigated in the empirical literature. There are, however, two studies that relate closely to the present analysis.

The first study, by Nekby et al. (2009) analyzes the ethnic identity of young second-generation adults in Sweden in relation to post-secondary educational attainment. A significant association between ethnic identity and educational outcomes is found predominantly for men. Men who are affiliated with both the majority and minority culture seem to have greater probabilities of completing tertiary education than men who identify only with one or neither of the two. However, and as Nekby et al. (2009) suggest themselves, the relationship of ethnic identity and education outcomes is likely to have been established earlier in the educational career. Mechanisms that link ethnic identity and educational outcomes at earlier stages might then run through parental influence rather than the child's own feelings of group belonging, given the importance of parental inputs and involvement in the child's capacity development at an early age. Second, Casey and Dustmann (2010) study the transmission of ethnic identities across generations. Their results indicate that immigrant parents transmit both their ethnic minority and majority identities to the next generation. More specifically, they find mothers to be relatively more important with respect to the transmission of minority identity, while fathers appear to transmit the German identity more strongly. Consequently, I expect the way parental identity is associated with immigrant children's education outcomes to vary between fathers and mothers.

This chapter adds to the two studies above by analyzing the possible influence of both majority and minority identity of immigrant mothers as well as fathers on the next generation's human capital accumulation. The analysis provides greater understanding of the intergenerational aspects of immigrant integration and the

[6] Concerning the naturalization of the children themselves, the evidence of a positive naturalization-effect is unclear. While Riphahn (2005) finds the association between citizenship and second-generation outcomes disappear after controlling for socio-economic background, Gang and Zimmermann (2000) report a significant and positive effect.

factors related to immigrant families' long-term economic advancement.

2.3 Empirical Setup and Data

2.3.1 Empirical Setup

The econometric framework used to assess the relationship between parental ethnic identity and immigrant children's educational attainment is given by the underlying latent variable model

$$y_i^* = \beta_0 + \beta_1' I_i + \beta_2' X_i + \epsilon_i, \qquad X_i = \{F_i, T_i, C_{ij}, O_i\}, \tag{2.1}$$

where y_i^* denotes child i's level of human capital, and I_i represents parental German and minority identity measures. X_i comprises control variables for child i's family background (F_i), the household's years since migration (T_i), a dummy variable C_{ij} indicating whether child i is a member of ethnic group j and other controls (O_i) such as region of residence and survey year.

Since human capital is not directly observable, equation (2.1) cannot be estimated straightaway. The earliest observable outcome is a child's enrolment in one of the traditional three schooling tracks after primary school. Assuming that a child is placed in one of the two highest tracks if, and only if, his or her human capital is above some threshold (without loss of generality set to 0) and also assuming that the error term ϵ_i in equation (2.1) follows the standard normal distribution, equation (2.1) can be rewritten as

$$P(y_i = 1) = P(y_i^* > 0) = \Phi(\beta_0 + \beta_1' I_i + \beta_2' X_i), \tag{2.2}$$

where $\Phi(\cdot)$ is the standard normal CDF.

At this point it is important to stress that the resulting estimates are to be cautiously interpreted. There might be a number of other characteristics and attributes correlated with parental ethnic identity that drive their pre-school educational investments or ability to navigate the German school system. Not all of these characteristics are observable and can be controlled for in the estimation. In the absence of an exogenous instrument correlated with identity, but not with the regression disturbance, results need to be carefully interpreted.

Another problem might be that results are driven by a simultaneity bias in

the case where children's educational performance impacts their parents' feelings of belonging. To some extent I confront this problem by employing measures of parental identity that are observed at least one year *before* secondary school tracking decisions are made.

2.3.2 Secondary Education in Germany

In the German school system crucial educational decisions are made relatively early at the transition from primary to secondary schooling. Usually at around the age of ten, and after only four years of primary education[7], pupils are separated into different secondary schooling tracks. Traditionally, secondary education in Germany is divided into three school types: the lower level *Hauptschule*, designed to prepare pupils for manual professions; the intermediate *Realschule*, which prepares students for administrative and lower white-collar jobs and finally the upper level *Gymnasium* – the most prestigious – which prepares students for higher education.[8] It is only the latter upper level track that provides direct access to the higher level academic system. All three types of schools are typically state-run and tuition-free.

The placement decision for secondary education is made jointly by parents and teachers. Primary school teachers recommend a secondary track, but these recommendations are not binding in many federal states.[9] As a result, the influence of parental views on the tracking decision is potentially significant. In general, Germany's early tracking system is often criticized as cementing educational careers at too early an age (e.g. Dustmann, 2004), especially since different curricula for the different school types leave little room for later upward (or downward) mobility.[10]

2.3.3 Data and Descriptive Evidence

I use data from the German Socio-Economic Panel (SOEP), a nationally representative, household-based, panel survey, which is administered annually since 1984

[7]Exceptions are the East German federal states of Berlin and Brandenburg, where primary school generally covers six grades. Also, in a few West German federal states, such as Hesse, Bremen and Lower-Saxony, some schools exist in which tracking is postponed for two years.

[8]Besides these three traditional secondary schooling types, there exists an alternative more recent school type, called *Gesamtschule* or comprehensive school, which combines all three tiers. Numerically, however, this type is not significant.

[9]Exceptions are Brandenburg, Saxony and Thuringia, in the east, and Baden-Württemberg, Bavaria and North Rhine-Westphalia in the west.

[10]Changing tracks after the initial school placement is in principle possible but rare in practice (Autorengruppe Bildungsberichterstattung, 2008).

(Wagner et al., 2007). One major advantage of the data is that since the initiation of the survey, the resident migrant population, i.e. mainly the traditional five immigrant nationalities in Germany (Greek, Italian, Spanish, Turkish, and Yugoslavian), is over-sampled. The first survey wave included about 1500 households with a foreign-born household head, which makes the dataset unique in providing repeated information on immigrants over a long period of time.

A second reason for using this dataset is that questions on ethnic self-identification were asked in a total of 12 waves (from 1984 through 1987, and every second year thereafter until 2003). In particular, foreign-born immigrants were asked on a five-point scale to what extent they felt 'German', and how strongly they felt connected to their country of origin. These measures capture the concept of ethnic identity as corresponding to the way individuals define themselves as members of a particular ethnic group (Tajfel, 1981; Akerlof and Kranton, 2000). Furthermore, the fact that each household head provides information about individuals in the household below the interviewing age of 16 allows me to investigate the tracking level of children's education. Using the father and mother-identifiers provided in the dataset allows the children's parents to be identified. Exploiting the SOEP data thus grants the possibility of studying the effect of immigrant ethnic identity in an intergenerational context.

In order to estimate the role of parental ethnic identity on immigrant children's educational attainment, I focus on the transition from primary to secondary school. Hence, the sample consists of pupils aged 10 – 14 for whom the transition from primary school to one of the secondary schooling tracks (*Hauptschule*, *Realschule* or *Gymnasium*) can be observed. Although the timing of secondary school placement differs for some federal states, by the age of 14 educational placement has been determined for almost all children.[11] The dependent variable, secondary school placement, is then defined as a dichotomous variable equal to one if, at age 10 – 14, the child experiences a transition from primary school to intermediate or upper secondary school and zero in the case of a transition to *Hauptschule*.[12] There are two reasons for grouping the two higher school levels. First, the split between them and the lower level school, *Hauptschule*, greatly determines the possibilities of later success in the German labor market. Second, children of immigrants appear to be generally overrepresented in the lowest track, while they are less likely than their

[11] A somewhat similar approach is taken by Spieß et al. (2003) and Haisken-DeNew et al. (1997), who examine 7th grade pupils at age 14.

[12] Note that pupils attending nonstandard schools such as *Gesamtschulen* (integrated schools) are excluded from the sample.

native peers to be tracked into one of the upper two school types (Riphahn, 2005).

The analysis is restricted to households residing in West Germany because of the virtual absence of a history of migration into East Germany. Furthermore, I focus on the traditional guest-worker population, thus excluding ethnic German immigrants who entered the SOEP in 1994/95 through additional sampling. The resulting sample is a random sample covering second-generation pupils from all parts of West Germany who could be matched to both their parents and for whom there is information on both parents' socio-economic and immigrant-specific characteristics.

A second-generation immigrant child is defined as an individual who is born in Germany and whose mother *and* father were born abroad[13] (indirect migration background). I also consider children of foreign-born parents who are themselves foreign born, but arrived in Germany before the age of 7 (direct migration background). These are usually referred to as the '1.5 generation'. Their inclusion is justified by the fact that they immigrated at pre-school age. The final sample comprises a total of 504 immigrant children (262 males and 242 females). Table 2.1 presents the dependent variable, i.e. secondary school enrolment by gender for this sample. Most notable is that the enrolment rates of around 70 percent into the lowest schooling track are relatively high when compared to the share of native German pupils attending this type of school, which is typically documented to amount to less than 30 percent (Frick and Wagner, 2001; Riphahn, 2005).

The main variables of interest are *minority identity* and *German identity* of immigrant parents. These measures of parental self-assessed ethnic identification

Table 2.1: Secondary School Enrolment (Age 10-14) by Gender

	Males		Females	
	%	*N*	%	*N*
Hauptschule	70.23	184	65.29	158
Realschule	17.18	45	23.14	56
Gymnasium	12.60	33	11.57	28
Total	100.00	262	100.00	242

Source: SOEP, own calculations.

[13]Note that children with mixed foreign backgrounds, e.g. one native and one immigrant parent, as well as single parents are thus excluded from the sample. This results in the loss of 42 observations of mixed native-immigrant background and three single-parent observations. In the ten cases where parents stem from different immigrant backgrounds children are assigned to the ethnic group of the household head.

with the minority ethnic culture, and the majority culture respectively, are based on information collected at least one year *prior* to when placement decisions are typically made, i.e. they are measured when children are eight or nine years old.[14] The two survey questions read: "To what extent do you view yourself as a German?" and "To what extent do you feel that you belong to the culture of the country where you or your family comes from?". Answers to these questions are coded into a five-point scale, ranging from "not at all" (1) to "completely" (5). Assuming that each, maternal and paternal minority as well as German identity may – independently from each other – exert an influence on educational attainment, I employ separate measures of minority and German identity for fathers and mothers respectively. I also choose to use identity measures as quasi-metric variables, thus using information from the entire observed distributions to avoid an arbitrary separation in two or three categories.[15]

Table 2.2 shows summary statistics of the parental identity measures for all individuals in the sample. The information indicates that the majority of both fathers and mothers do not or only weakly identify with German culture and very strongly with their culture of origin. Nevertheless, there is considerable cross-sectional variation in all four parental identity measures. Considering that minority and German identity are measured on a five-point scale, a standard deviation of around one represents a reasonably large variation from the average. For the sake of a better interpretation of results identity measures are in the following rescaled to have a mean of zero and a standard deviation of one.

Table 2.2: Sample Distribution of Parental Ethnic Identity

	Mean	Median	Standard Deviation	Observations
Mother German Identity	1.980	2	1.062	504
Mother Minority Identity	4.242	5	0.971	504
Father German Identity	2.157	2	1.046	504
Father Minority Identity	4.171	5	0.978	504

Source: SOEP, own calculations.
Note: Parental ethnic identity is recorded at child's age 8/9 and measured on a five-level scale ranging from *not at all* (1) to *completely* (5).

[14] Since questions on ethnic self-identification are not available for every survey year, I include observations of the respective previous year, which correspond to the parental identity when the child was eight years old.

[15] The main results remain, however, robust when employing binary variables indicating above- or below-median parental identity instead of quasi-metric measures.

Table 2.3: Intra-Family Distribution of Parental Ethnic Identity

	Mother Minority Identity					
	below Median		Median or above		Total	
Mother German Identity	%	*N*	%	*N*	%	*N*
below Median	8.73	20	91.27	209	100.00	229
Median or above	76.36	210	23.64	65	100.00	275
Total	45.63	230	54.37	274	100.00	504

	Father Minority Identity					
	below Median		Median or above		Total	
Father German Identity	%	*N*	%	*N*	%	*N*
below Median	8.15	15	91.85	169	100.00	184
Median or above	73.75	236	26.25	84	100.00	320
Total	49.80	251	50.20	253	100.00	504

	Father German Identity					
	below Median		Median or above		Total	
Mother German Identity	%	*N*	%	*N*	%	*N*
below Median	66.38	152	33.62	77	100.00	229
Median or above	11.64	32	88.36	243	100.00	275
Total	36.51	184	63.49	320	100.00	504

	Father Minority Identity					
	below Median		Median or above		Total	
Mother Minority Identity	%	*N*	%	*N*	%	*N*
below Median	80.43	185	19.57	45	100.00	230
Median or above	24.09	66	75.91	208	100.00	274
Total	49.80	234	50.20	253	100.00	504

Source: SOEP, own calculations.

Table 2.3 provides an overview of the patterns of maternal and paternal identities within families distinguished by above- and below-median parental German and minority identity. It is important to note that although measures of minority and German identity are negatively correlated across fathers and mothers respectively, and in spite of the relatively high intra-family correlation between fathers' and mothers' identities, there is clearly substantial variation for each of the four parental identity factors which is independent from the other, even within immigrant families. When, e.g., attention is restricted to mothers who state a German identity at or above the sample median, 23.64 percent of these mothers also exert a strong affiliation towards their background culture. Similarly, 11.64 percent of their partners state a below-median German identity. As later analysis will show, this intra-family variance of parental ethnic identities is adequate to provide reasonably precise estimates of the relationship between measures of fathers' (mothers') identity and child educational attainment, conditional on mothers' (fathers') ethnic identity measures.

As a first impression of the relationship between parental ethnic identity and educational attainment, Table 2.4 compares the sample probabilities of a child being tracked into intermediate (*Realschule*) or upper secondary school (*Gymnasium*) by above- and below-median parental German and minority identity. Children whose mothers state a relatively higher affiliation to the German culture are considerably more likely to be enrolled in one of the higher school tracks. The difference in higher track enrolment probability between them and children, whose mothers' German identity is relatively weaker, amounts to roughly 9 percentage points. The relationship of mothers' minority identity and secondary school enrolment is the inverse. However, differences are not significant at the 5 percent level. With respect to fathers' ethnic identity, the picture is less clear. Higher track enrolment probabilities do not appear to be significantly different for pupils whose fathers' German or minority identity is above or below the sample median.

The following empirical exercise explores whether this first descriptive indication of associations between parental ethnic identity and educational attainment holds when accounting for the influence of family background, ethnicity and the immigrant families' years since migration. The concern is that associations between parental ethnic identity and educational attainment reflect systematic differences in family background, ethnic capital or duration of stay rather than effects stemming from the parents' sense of group membership and emotional attachment.

In order to control for parental socio-economic background, I employ two in-

Table 2.4: Enrolment Probabilities in Intermediate/Upper Secondary School by Parental Ethnic Identity

	Identity below Median	Identity Median or above
	Mother German Identity	
Interm/Upper=1	0.271*	0.364*
Total	229	275
	Mother Minority Identity	
Interm/Upper=1	0.352	0.296
Total	230	274
	Father German Identity	
Interm/Upper=1	0.321	0.322
Total	184	320
	Father Minority Identity	
Interm/Upper=1	0.311	0.332
Total	251	253

Source: SOEP, own calculations.
Note: * Statistically different at 5 percent confidence level.

dicators: both parents' years of education and disposable household income[16] per household member.[17] I also control for the number of children in the household as families must divide financial resources as well as time and attention. These variables control for the influence of a *favorable family background* (Chiswick, 1988). *Ethnic capital* (Borjas, 1992) is represented by the children's ethnic group, a variable constructed using both the parents' and the child's information on country of origin and nationality.[18] In addition, the household heads' years residing in Germany is included, thus controlling for the pure *time aspects* of the parental cultural integration process. Federal state dummies and a dummy for urban or rural place of residence control for compositional and regional differences. Calendar effects are controlled for by the year of observation. Due to evidence on birth order effects (e.g. Black et al., 2005), I also control for the child being a firstborn. Summary statistics of the main variables used are presented in Table 2.5.

2.4 Results and Discussion

2.4.1 Main Results

This section examines the main estimates of the relationship between immigrant parents' ethnic identities and educational attainment of their offspring. Table 2.6 shows the average marginal effects from binary probit estimations of a child's enrolment probability in intermediate or upper secondary school at age 10 – 14 on parental ethnic identity measured at the child's age eight or nine. Results reported in panel A are from simple regressions on parental identity measures and basic covariates, such as federal state and survey year, while results presented in panel B are based on estimations of the most extensive model specification, including controls for family background, ethnicity and the household's years since migration. Standard errors are adjusted for clustering by household in each model to account for correlations between children who live in the same household.

[16] Adjusted monthly net household income deflated by 2008 CPI.

[17] Based on previous empirical literature (e.g. Constant and Zimmermann, 2009) one might expect parents' ethnic identification to be associated with their labor force participation, which is why I choose not to include these variables in my preferred specifications. However, the inclusion of parental labor force status does not alter the empirical results. Household income is included since it contains pensions, unemployment benefits, welfare subsidies etc. and is thus rather seen as a measure of the families' financial resources than parental labor market success.

[18] The sample is restricted to ethnic groups from the major guest-worker countries Greece, Italy, Spain, Turkey, and the former Yugoslavia.

Table 2.5: Summary Statistics, Selected Sample Means

Enrolment in Intermediate/Upper Secondary School	0.321	(0.467)
Family Background:		
Mother Yrs of Education	8.809	(1.690)
Father Yrs of Education	9.422	(1.657)
Household Income/1000	2.804	(1.532)
Years since Migration Household	20.962	(5.583)
Nr. of Children in Household	2.452	(1.035)
Firstborn Child	0.325	(0.469)
Ethnic Background:		
Turkey	0.548	(0.498)
Former Yugoslavia	0.175	(0.380)
Italy	0.143	(0.350)
Greece	0.077	(0.267)
Spain	0.058	(0.233)
Survey Year:		
1986-1990	0.387	(0.488)
1991-1995	0.276	(0.447)
1996-2000	0.188	(0.391)
2001-2007	0.149	(0.356)
Rural	0.335	(0.473)
Town	0.288	(0.453)
City	0.377	(0.485)
Number of Observations	504	

Source: SOEP, own calculations.
Note: Entries are means. Standard deviation in parentheses. Secondary school enrolment is recorded as first transition after primary school at child's age 10 – 14. All other variables are measured at child's age ten. Household income is measured in 2008 euros.

Table 2.6: Average Marginal Effects for Probit of "Enrolment in Intermediate/Upper Secondary School"

	(1)	(2)	(3)	(4)	(5)	(6)
	A. Without Controls					
Mother German Identity		0.054**				0.063**
		(0.022)				(0.031)
Mother Minority Identity			-0.034			-0.038
			(0.022)			(0.030)
Father German Identity				-0.016		-0.016
				(0.022)		(0.029)
Father Minority Identity					0.043**	0.079***
					(0.021)	(0.028)
Pseudo R^2	0.081	0.092	0.085	0.082	0.087	0.112
AIC	605.6	600.7	604.9	607.1	603.5	594.3
	B. Controlling for Ethnic and Family Background					
Mother German Identity		0.053**				0.069**
		(0.022)				(0.031)
Mother Minority Identity			-0.035			-0.042
			(0.021)			(0.030)
Father German Identity				-0.022		-0.030
				(0.022)		(0.029)
Father Minority Identity					0.040*	0.072***
					(0.021)	(0.028)
Turkey *(Reference)*						
Former Yugoslavia	0.037	0.004	0.026	0.038	0.035	-0.023
	(0.059)	(0.060)	(0.060)	(0.058)	(0.058)	(0.058)
Italy	-0.077	-0.094	-0.085	-0.081	-0.084	-0.129*
	(0.068)	(0.067)	(0.067)	(0.068)	(0.068)	(0.067)
Greece	0.204***	0.184***	0.204***	0.202***	0.193***	0.153**
	(0.071)	(0.070)	(0.070)	(0.071)	(0.070)	(0.070)
Spain	0.001	-0.027	-0.010	0.007	-0.011	-0.063
	(0.091)	(0.093)	(0.091)	(0.090)	(0.090)	(0.093)
Yrs since Migration HH	0.000	0.001	0.000	0.001	0.001	0.003
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
Female *(Reference)*						
Male	-0.056	-0.067*	-0.060	-0.055	-0.054	-0.073*
	(0.040)	(0.041)	(0.041)	(0.040)	(0.040)	(0.040)
Mother Yrs of Education	0.009	0.003	0.005	0.010	0.009	-0.001
	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)	(0.013)
Father Yrs of Education	0.020	0.021*	0.020	0.020*	0.020*	0.024*
	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)
HH Income/1000	-0.016	-0.016	-0.018	-0.016	-0.014	-0.014
	(0.022)	(0.021)	(0.022)	(0.022)	(0.020)	(0.016)
Nr. Children in HH	-0.036	-0.037	-0.036	-0.034	-0.034	-0.033
	(0.023)	(0.023)	(0.023)	(0.023)	(0.023)	(0.023)
Firstborn	0.004	0.001	0.002	0.006	0.006	0.004
	(0.044)	(0.043)	(0.043)	(0.044)	(0.044)	(0.043)
N	503	503	503	503	503	503
Pseudo R^2	0.119	0.129	0.124	0.121	0.125	0.150
AIC	603.5	599.5	602.6	604.4	601.8	592.1

Source: SOEP, own calculations.
Note: Clustered standard errors by household. Additional controls for federal states, location of residence size and survey year (four categories) in all models (results omitted). The federal state of Bremen is omitted due to collinearity (one observation dropped). See notes to Table 2.5.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

In order to assess the relevance of each parental identity measure, I employ several specifications. First, secondary school enrolment is regressed on each of the parental identity measures separately (Columns 2 – 5), and subsequently, I estimate a model including the full set of identity variables (Column 6). When each measure of parental ethnic identity is considered on its own (i.e. without conditioning on other identity measures), I find a rather strong and highly significant positive association between mothers' German identity and higher-level secondary school enrolment (Column 2), while mothers' minority identity exerts a negative but insignificant influence (Column 3). Thus, children whose mothers are more strongly affiliated to the host country culture are more likely to be tracked into one of the two highest schooling types. The estimated average marginal effects suggest that one standard deviation of additional maternal German identity is associated with a statistically significant 5.4 percent increase in the probability of the child's enrolment in one of the higher track schools (Column 2). The estimated effect of mothers' minority identity is -3.4 percent, but not statistically different from zero (Column 3).

With respect to fathers, results in Columns 4 and 5 indicate a substantially different pattern. First of all, whether fathers feel more or less German does not seem to significantly impact enrolment probabilities. The estimated average marginal effect of paternal German identity amounts to -1.6 percent, but is statistically insignificant. Interestingly, and contrary to what is found for mothers, it appears that it is the father's *minority* identity that is significantly and *positively* associated with the child's enrolment probability in one of the higher track schools. The estimated marginal effect of a one-standard-deviation increase in fathers' minority identity is a statistically significant 4.3 percent (Column 5). Hence, children of fathers with relatively stronger minority identification are more likely to be tracked into one of the higher secondary schooling types.

The picture that emerges from this first set of results indicates that among all parental identity measures, the German identity of immigrant mothers as well as the minority identity of immigrant fathers are the relevant variables contributing to the explanation of immigrant children's educational attainment. Interestingly, both of these associations are positive. One could have expected that each of the parental identity measures, if considered on its own, would pick up significant variation simply because of the generally negative correlation between the German and minority identity and the positive intra-family correlation between parents' identities. There is, however, little evidence that this is the case, since the estimated effects of mothers'

minority and fathers' German identity are already smaller and not significant when considered separately.

Next, I estimate a model including the full set of parental identity variables (Column 6). Consider a sample of immigrant children whose mothers all state a strong minority identity. Among these mothers, some will feel more or less affiliated with the German society. The fathers of these children will also vary in their strength of minority identity (see Table 2.3). I am now interested in examining how the estimated contribution of one parental ethnic identity measure changes when introducing the other identity measures. I find that the general pattern of a positive relation between mothers' German identity and the child's educational attainment as well as the positive minority identity effects of immigrant fathers appear to be robust when conditioning on all other identity variables.[19] The estimated effects are even slightly stronger than in specifications without conditioning on other parental identity measures. As in Columns 3 and 4, none of the other two parental identity measures exert a significant impact on enrolment probabilities. The measures of fit reported in Table 2.6 indicate that the latter model has the greatest explanatory power in comparison.

I move on to account for a possible relationship between parental ethnic identity and aspects of ethnicity, family background and the household's years since migration. Results reported in panel B of Table 2.6 show that adding these controls leave the estimates of parental ethnic identity essentially unchanged.

This analysis thus indicates that mothers' affiliation to German culture, as well as fathers' minority identity, are the relevant parental identity measures contributing to determining immigrant children's educational attainment.[20] The findings are robust to the introduction of controls for ethnicity, years since migration and family background. The possibility that parental identity effects reflect a correlation between parental ethnic identity and certain ethnicity, family background or pure

[19] Note also that interaction terms between mothers' and fathers' identity as well as between parental minority and majority identity turn out to be not significant (results can be obtained from the author upon request).

[20] These main findings are somewhat contradictory to Casey and Dustmann (2010), who study the transmission of ethnic identities across generations. Although they are not looking at child education, their results indicate that mothers transmit the minority identity more strongly and that fathers play a more important role with respect to the transmission of the German identity, whilst I find maternal *majority* and paternal *minority* identity do matter for a child's educational attainment. One possible reason for these seemingly different results might be that, as discussed more extensively in Section 1 and 2, the impact of parental ethnic identity on child education is not solely due to intergenerational transmission of feelings of belonging, particularly not early in the child's life. Parental ethnic identity at this stage might rather directly affect the ability and the way parents invest in their children's educational development.

time effects of integration can therefore be ruled out.

Notable additional results show that children with a Greek background are significantly more likely to end up in one of the higher secondary schooling types than children of any other ethnic background reviewed here – even net of identity, family background and years-since-migration effects.[21] Children from other guest-worker backgrounds, however, do not differ significantly in their enrolment behavior from children of Turkish origin, the reference group. Furthermore, the household's years since migration do not seem to be significantly correlated with educational attainment.[22] Thus, in contrast to parental ethnic identity, ethnicity per se and pure time aspects of parental integration do not appear to be associated with secondary school placement. Among the family background characteristics controlled for, solely fathers' education appears to play a significant role. The estimated marginal effect amounts to a weakly statistically significant 2.0 to 2.4 percent increase in transition probability to a higher tracking school depending on the specification. The marginal effect of one additional child in the household amounts to around -3.5 percent but is statistically significant only just above the 10 percent level.

2.4.2 Extensions and Robustness Checks

Turkish Subsample

Associations between parental ethnic identity and educational attainment may vary across different ethnic groups due to heterogeneity in cultural background, especially in view of the potential importance of the cultural distance or tension between the majority and the specific ethnic culture (Chiswick, 2009). Although the main estimations in Table 2.6 control for country of origin fixed effects, separate estimations by ethnic group would help assess whether parental identity effects are an artifact of aggregation over different countries of origin. However, small sample sizes with respect to most ethnic groups do not allow for this option, except for the group of children with a Turkish migration background, which represent the numerically largest group in the sample. Table 2.7 displays estimation results of the basic models including the full set of controls for the sub-sample of children with a Turkish family background. These results are basically similar to those reported in Table 2.6.

[21] Literature on the migrant-native gap in education outcomes in Germany attributes the Greek academic success to the availability of alternative Greek-language schools in Germany (e.g. Alba et al., 1994).

[22] Neither do parental years since migration appear to matter significantly when included separately for mothers and fathers (results not shown here but available upon request).

Table 2.7: Average Marginal Effects for Probit of "Enrolment in Intermediate/Upper Secondary School", Turkish Sub-Sample

	(1)	(2)	(3)	(4)	(5)
Mother German Identity	0.056*				0.065
	(0.032)				(0.041)
Mother Minority Identity		-0.035			-0.042
		(0.030)			(0.039)
Father German Identity			-0.013		-0.011
			(0.028)		(0.037)
Father Minority Identity				0.037	0.071**
				(0.025)	(0.034)
N	276	276	276	276	276
Pseudo R^2	0.147	0.143	0.139	0.144	0.164
AIC	338.0	339.6	340.8	339.0	338.0

Source: SOEP, own calculations.
Note: Clustered standard errors by household. Additional controls for the household's years since migration, gender, parental and household characteristics, survey year, federal states, and location of residence size in all models. The federal state of Bremen is omitted due to collinearity.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Sibling Fixed Effects

As shown in Section 2.4.1, differences in measurable family background characteristics, including the immigrant household's years since migration, do not seem to contribute considerably to an explanation of parental ethnic identity effects. However, one might argue that the robustness of parental identity effects to controlling for family background characteristics is due to the necessarily imperfect quality of the measures employed. The relevant characteristics of a child's home environment may remain unobserved and thus unmeasured. According to this argument, mothers' German and fathers' minority identity are a better indicator than the imperfect measure of family background of some unobservable which is directly related to children's home environment. In this subsection I provide evidence that parental ethnic identity effects are not merely a reflection of omitted home factors such as the family's social network or wealth of the (extended) family, among others.

In the following I use the intra-family variation among siblings in parental ethnic identity in order to assess the influence of unobserved family background characteristics in determining parental identity effects on enrolment probabilities. By adding fixed effects for each family in my models, unobserved characteristics that are common to siblings are controlled. If parental ethnic identity effects are driven by time-invariant family background characteristics, I should not find sizable effects of

Table 2.8: Linear Probability Model on "Enrolment in Intermediate/Upper Secondary School" with Sibling Fixed Effects

	(1)	(2)	(3)	(4)	(5)
Mother German Identity	0.071*				0.112**
	(0.042)				(0.055)
Mother Minority Identity		0.009			-0.016
		(0.050)			(0.067)
Father German Identity			-0.004		-0.012
			(0.043)		(0.056)
Father Minority Identity				0.080*	0.123**
				(0.044)	(0.060)
Firstborn	0.034	0.026	0.027	0.036	0.053
	(0.073)	(0.074)	(0.074)	(0.073)	(0.073)
Male	-0.114*	-0.115*	-0.115*	-0.111*	-0.107*
	(0.064)	(0.065)	(0.065)	(0.064)	(0.064)
HH Income/1000	-0.034**	-0.031*	-0.032*	-0.032*	-0.035**
	(0.016)	(0.017)	(0.016)	(0.016)	(0.017)
Nr. Children in HH	0.116*	0.133**	0.132**	0.157**	0.146**
	(0.065)	(0.066)	(0.065)	(0.066)	(0.065)
Yrs since Migration HH	0.034**	0.039***	0.039***	0.046***	0.042***
	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)
N	298	298	298	298	298
R^2	0.108	0.092	0.092	0.111	0.146
AIC	98.73	104.0	104.0	97.94	91.94

Source: SOEP, own calculations.
Note: Sibling fixed effects estimation. Additional constant term in all models.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

parental ethnic identity on the child's tracking probability into one of the higher level schools. As we shall see, there is sufficient variation across siblings in parental ethnic identity measures to make this strategy viable. The variation in parental ethnic identity experienced by the siblings comes from the age gap between them, since parental ethnic identity is measured for each sibling when they are eight or nine years old.

Table 2.8 presents the estimation results of linear probability models allowing for family fixed effects performed on the sibling-subsample. I find a remarkably similar pattern to results presented in Table 2.6. Differences between siblings in their mothers' strength of German and their fathers' minority identity have a substantial and positive relationship with differences in their secondary school track placement. Estimated coefficients on the other two identity variables are close to zero and statistically insignificant. Hence, I conclude that there is no evidence of unobserved family environment characteristics that can account for parental ethnic

identity effects on secondary school enrolment.

The Role of Language Proficiency

The previous subsection indicates that the advantage immigrant children receive from having a mother that is relatively stronger affiliated with the German society and a father whose minority identity is rather strong, cannot be explained by omitted home environment or family background factors. Thus, I conclude that mothers' German and fathers' minority identity facilitate the acquisition of some sort of important human capital. It stands to reason that parental language ability might play a significant role in this context (see e.g. Bleakley and Chin, 2008).

Here, I explore the role of parental language proficiency in explaining ethnic identity effects. The SOEP survey includes information on language proficiency for exactly the same survey years in which questions on ethnic identity are asked, allowing me to investigate this issue using the same sample of immigrant children analyzed above. Similar to the ethnic identity measure, I use information on parents' language ability reported when the child was eight or nine years old. Table 2.9 displays summary statistics of these measures of parental self-assessed oral language proficiency.

Table 2.10 shows the average marginal effects from estimations of probit models identical to those in panel B of Table 2.6 – controlling additionally for measures of parental German and minority language proficiency. These variables seem to play a significant role in explaining mothers' German identity effect. Conditional on mothers' German proficiency, the marginal effect of mothers' German identity decreases substantially in size and turns statistically insignificant, a phenomenon observed in both specifications, with and without controls for the respective other

Table 2.9: Sample Distribution of Parental Language Proficiency

	Mean	Median	Standard Deviation	Observations
Mother German Proficiency	3.076	3	1.057	500
Mother Minority Language	4.448	5	0.651	500
Father German Proficiency	3.538	4	0.833	500
Father Minority Language	4.476	5	0.692	500

Source: SOEP, own calculations.
Note: Parental oral language proficiency is recorded at child's age 8/9 and measured on a five-level scale ranging from *not at all* (1) to *very well* (5). Four observations dropped due to missing information on parental language proficiency.

parental identity and language measures (Columns 1 and 5). At the same time, the estimated effect of mothers' German language proficiency is sizeable and highly significant in both specifications. The effect of fathers' minority identity instead appears not to be a result of any sort of differences in fathers' German or minority language proficiency. Including measures of parental language proficiency leaves the estimated marginal effects of fathers' identity measures essentially unchanged. Neither does fathers' language proficiency per se appear to have anything to do with the child's secondary school enrolment.

The finding, that controlling for mothers' German language proficiency eliminates the effect of mothers' German identity on the child's educational attainment casts doubt on the relevance of mothers' ethnic identity per se. This analysis rather points toward mothers' German identity predicting the child's educational attainment only insofar as ethnic affiliation is correlated with the mother's language proficiency. The relationship between language skills and educational performance, in turn, may be predominantly established through the mother's active management of the child's educational career, e.g. through monitoring of homework or contact with the school (Baker and Stevenson, 1986) and the beneficial effect of host language proficiency and general knowledge of the host country educational system on the efficiency of such strategies.

With respect to fathers, the finding of beneficial effects of minority identity on children's educational attainment cannot be explained by language proficiency. Other mechanisms, e.g. related to fathers' patriarchal enforcement of traditional family values and rules, might serve as a stabilizing element that contributes to the child's better academic performance. However, the latter are rather speculative interpretations and a further investigation of mechanisms and explanations with respect to the positive minority identity effects of immigrant fathers on their children's educational performance is needed. Interestingly, my findings are consistent with Adda et al. (2011) who evaluate the long-term consequences of parental death on children's outcomes and find mothers to be more important for cognitive skills and fathers for non-cognitive ones.

2.5 Summary and Conclusion

The purpose of this analysis is to investigate the relationship between immigrant parental ethnic identity and the educational attainment of their children in the host country schooling system. A systematic association between parental ethnic identity

Table 2.10: Average Marginal Effects from Probit of "Enrolment in Intermediate/Upper Secondary School". The Role of Parental Language Proficiency

	(1)	(2)	(3)	(4)	(5)
	A. Parental Ethnic Identity controlling for Parental Language Proficiency				
Mother German Identity	0.020				0.032
	(0.025)				(0.034)
Mother Minority Identity		-0.035*			-0.041
		(0.021)			(0.030)
Father German Identity			-0.029		-0.012
			(0.023)		(0.029)
Father Minority Identity				0.041*	0.077***
				(0.022)	(0.028)
Mother German Proficiency	0.093***				0.080***
	(0.024)				(0.025)
Mother Minority Language		0.011			-0.002
		(0.020)			(0.024)
Father German Proficiency			0.019		0.016
			(0.022)		(0.022)
Father Minority Language				0.003	0.001
				(0.021)	(0.024)
Pseudo R^2	0.152	0.124	0.123	0.126	0.169
AIC	584.1	601.5	602.4	600.4	585.6
	B. Parental Language Proficiency				
Mother German Proficiency	0.101***				0.102***
	(0.022)				(0.022)
Mother Minority Language		0.004			-0.011
		(0.020)			(0.025)
Father German Proficiency			0.011		-0.003
			(0.021)		(0.021)
Father Minority Language				0.009	0.016
				(0.021)	(0.024)
N	499	499	499	499	499
Pseudo R^2	0.151	0.120	0.120	0.120	0.152
AIC	582.8	602.3	602.0	602.1	588.4

Source: SOEP, own calculations.
Note: Clustered standard errors by household. Additional controls for country of origin, the household's years since migration, gender, parental and household characteristics, survey year (four categories), federal states and location of residence size in all models. The federal state of Bremen is omitted due to collinearity (one observation dropped).
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

and child education is indeed found. The contribution of parental identity measures to explain differences within the second-generation population is substantial and goes beyond ethnicity, years-since-migration or socio-economic family background effects. Furthermore, the main results presented in this study underline the importance of modeling ethnic identity in a two-dimensional framework and to consider measures of both paternal and maternal German identity as well as the respective minority identity measures. With respect to educational attainment, there is no evidence that the effects of a strong parental minority identity are solely the flipside of a weak parental majority identity. Rather, results support the view that both parental identities influence the child's educational attainment independently. Moreover, it is found that parents' affiliation to both the majority *and* the minority group are potentially *beneficial* for immigrant children's educational careers. Consequently, I find no evidence of parental minority identity being a threat to educational progression.

The main finding that children's probability of being tracked into one of the higher secondary schooling types increases with strength of mothers' self-identification with the host country and fathers' affiliation to the minority group suggests differing roles for fathers and mothers with respect to their children's scholarly career. It is thus possible that fathers and mothers influence their child's educational attainment through different channels. Additional tests confirm this view by indicating that the positive effect of maternal German identity is not an effect of ethnic affiliation per se, but can be explained by mothers' command of the German language. Beneficial effects of paternal minority identity, on the other hand, seem to originate from a sense of group belonging. These findings are in line with the role of mothers as active managers of their child's scholarly career. It is mostly mothers that are responsible for monitoring homework, being informed about their child's school performance and keeping in contact with teachers. Consequently, better German language proficiency and knowledge of the German school system increase the efficiency of immigrant mothers' strategies to actively help their child through school.

A strong sense of belonging to an ethnic minority group transmitted by fathers, on the other hand, might generally help to increase children's self-esteem and shelter against experiences of discrimination in the school environment, which in turn can benefit educational performance. In addition to being a role model, fathers might influence a child's educational attainment through family rules. Especially in patriarchally organized cultures, it is the father who sets the family rules and enforces them.

The results presented show that the concept of parental ethnic identity might help us to understand immigrant families' intergenerational economic advancement and the long-term consequences of immigrants' emotional attachment to their background and the majority culture. Several pathways for further research can be highlighted. The fact that gender effects with respect to immigrant sons and daughters have not been addressed here is a reflection of the limited number of observations, and not the importance of the topic. One could expect different associations between parental ethnic identity and education due to culturally motivated gender roles within immigrant families. Similarly, the relationship between parental minority identity and education might vary across different ethnic groups according to their cultural distance to the majority culture. Most importantly, my results point at the conjecture that calling on immigrants to abandon their cultural heritage is not only inconclusive, but might also have detrimental effects on immigrants' long-term structural integration into the host country.

Chapter 3

Decomposing the Native-Migrant Education Gap*

3.1 Introduction

Native-migrant gaps in economic outcomes are documented in many countries. This is *per se* not very surprising – given that migrants are selected groups (Borjas, 1987), that their human capital may not be entirely transferable (Chiswick, 1978; Borjas, 1985), that their language skills may be insufficient (Dustmann and Fabbri, 2003), and that they may face discrimination (Bertrand and Mullainathan, 2004). However, the extent to which these gaps are persistent across migrant generations is startling. Algan et al. (2010) find intergenerational progress for second-generation migrants in France, Germany and the United Kingdom, but the performance deficits in comparison to native peers remain substantial (see also OECD, 2006; Schneeweis, 2011).

This chapter focuses on the gap in education outcomes since education is widely perceived as the main channel through which migrant families could economically catch up over generations with the native population. Despite of a growing number of related studies,[1] the literature has not yet arrived at a unique answer as to whether differences in socioeconomic family background can (entirely) explain the

*This chapter is based on joint work with Annabelle Krause and Ulf Rinne (see Krause et al., 2012).

[1]The international literature on the educational attainment of second-generation migrants is relatively large and growing (e.g., Borjas, 1992; van Ours and Veenman, 2003; Nielsen et al., 2003; Cobb-Clark and Nguyen, 2012; Belzil and Poinas, 2010). There are moreover several studies for Germany documenting a persistent native-migrant gap in education outcomes (e.g., Haisken-DeNew et al., 1997; Gang and Zimmermann, 2000; Riphahn, 2003, 2005).

native-migrant gaps in education. On the one hand, a strand of the literature argues that the performance differences are, at least in part, associated with the children's migration background *per se* through migrant-specific factors such as institutional discrimination, school segregation or language ability (see, e.g., OECD, 2006) – even after controlling for socioeconomic background. On the other hand, a relatively large part of the literature argues that it is predominantly the disadvantage of migrant children in terms of socioeconomic status which leads to these gaps in Germany (e.g., Entorf and Tatsi, 2009; Lüdemann and Schwerdt, 2013). Consequently, only little ethnic inequality remains after controlling for the families' social background. The findings of Luthra (2010) even indicate a migrant *advantage* over native youths.

Against this background, this paper provides a further assessment of the current understanding of ethnic inequalities in Germany's education system. We explicitly decompose the native-migrant education gap into a part explained by compositional differences in socioeconomic background and an unexplained part, which is likely related to migrant-specific factors. Our analysis is based on a twofold decomposition approach. Next to linear decomposition methods, we use matching techniques to arrive at a picture that is robust to methodological variations. We further add to the literature by examining three different outcomes for the same individuals spanning a crucial period in children's educational careers around and after their transition into secondary schooling. These outcomes moreover vary in the degree to which they are influenced by teachers, parents and children. In contrast to the paper which is closest to our study (Lüdemann and Schwerdt, 2013), our analysis additionally includes actual enrollment and track attendance throughout secondary education. In this context, we are able to follow the *same* individuals over time by using longitudinal data from the German Socio-Economic Panel Study (SOEP). For the first time, sample sizes allow for studying this important topic with these data. We are thus able to shed light on a heavily debated question from different angles in terms of methods, outcomes and data.

Our results show first, that second-generation migrants differ from their native peers in important characteristics. We observe significant differences in terms of household characteristics and parental background. Second, these differences appear entirely responsible for differences in recommendations given by teachers for and enrollment rates at different secondary school types. Also the gaps in educational attainment at age 17 can be attributed to differences in socioeconomic background. In other words, comparable natives face similar difficulties and show similar education outcomes as migrant children. Our results are therefore broadly

in line with Lüdemann and Schwerdt (2013) who focus on outcomes at the end of primary school. We extend their findings by showing that these results are robust to methodological variations and also hold throughout secondary education, i.e. with respect to actual enrollment and track attendance.

The remainder of this chapter is organized as follows. Section 3.2 briefly describes the institutional background of the analysis. After describing our data and our sample in Section 3.3, we outline and discuss our empirical approach in Section 3.4 and present our results in Section 3.5. A sensitivity analysis is performed in Section 3.6 and Section 3.7 concludes.

3.2 Institutional Background

3.2.1 Germany's Secondary Education System

Important decisions are made relatively early in Germany's education system. One crucial point in time is the transition from primary to secondary schooling. At around the age of 10 years, i.e. after four years of primary education, pupils are tracked into three different types of secondary schooling.[2]

Traditionally, secondary schooling in Germany is divided into the following three types: *a*) a lower secondary school (*Hauptschule*), which is designed to prepare pupils for manual professions, *b*) an intermediate secondary school (*Realschule*), which prepares students for administrative and lower white-collar jobs, and *c*) an upper secondary school (*Gymnasium*), the school type which prepares for higher education. Only the latter track allows for direct access to universities. All three types are typically public and tuition-free.

The decision of secondary school placement is made jointly by parents and teachers. Primary school teachers recommend a secondary school track, but these recommendations are not binding in most federal states.This early tracking system could run the risk of cementing educational careers at an early age. For example, different curricula for the respective school types may leave only little room for later upward mobility.

[2]Note that some variation exists in this regard as education legislation is made by the federal states.

3.2.2 Migrants in Germany

Germany's migration history after World War II started during the post-war economic boom, when the country focused on the recruitment of low-skilled foreign labor. Many of these guest workers from Southern European countries, who arrived until 1973, settled and were joined by their spouses. The group which is nowadays referred to as second-generation migrants mainly consists of the offspring of those migrants. In the late 1980s and early 1990s, Germany experienced massive immigration flows of ethnic Germans from Eastern Europe. Subsequently, Germany also received a relatively large number of humanitarian migrants; and particularly after the enlargement of the European Union (EU) in 2004 and 2007, migration streams from Central and Eastern European countries have been substantial and increasing.[3]

Today's composition of migrants in Germany is therefore dominated by five groups: *a*) guest workers and their spouses, *b*) their offspring, *c*) ethnic Germans from Eastern Europe, *d*) recent immigrants from the EU and accession countries, and *e*) humanitarian migrants. Turks are by far the largest group of individuals with a migration background, followed by Poles, Russians and Italians. In 2010, 19.3 percent of the German population (or 15.7 million individuals) had a migration background (Statistisches Bundesamt, 2010). Among children aged 5 and below, around one third (34.85 percent) is descended from a migrant family.

Although the group of migrant children represents a large and growing part of the German population, the situation of second-generation migrants with respect to educational attainment is alarming. The share among individuals with a migration background who end up enrolling in the lowest secondary schooling track is about twice as large as among natives (Maaz et al., 2010). This may, however, be related to the particular selection process of the parent generation, i.e. mainly guest workers who were actively recruited by German firms until 1973. In contrast to other immigration countries, there had been no positive selection of migrants when compared to the native population. The aim was rather to fill temporary shortages of low-skilled labor, and thus primarily low-skilled workers were recruited.

[3]See, e.g., Kahanec and Zimmermann (2009) for a comprehensive analysis of the consequences of east-to-west labor migration for the old and new EU member states.

3.3 Data

The data of this study stem from the German Socio-Economic Panel Study (SOEP).[4] The SOEP is a representative longitudinal study of private households in Germany. Interviews are conducted in annual waves starting in 1984. As we focus on children in the education system, we take advantage of information collected from 17-year-old first-time respondents. The so-called youth questionnaire was introduced in 2001 and contains retrospective questions about the school career, music education and sport activities. This includes, for example, self-reported information about recommendations for secondary schooling and grade repetition, which are rarely available in other datasets.[5]

Next to the youth questionnaires from 2001 to 2009, we use information on parental and household characteristics from the regular SOEP. These are measured when the children were 10 years old, i.e. when the transition to secondary schooling typically takes place. Our sample is thus restricted to those children whose parents are observed in the SOEP at this time. We furthermore focus on individuals living in West Germany as the share of migrants in East Germany is still relatively low. We discard observations with missing information in important characteristics and we exclude children who attend comprehensive schools from our analysis. It is not possible to distinguish between different tracks at these schools in our data.

Our final sample consists of 770 individuals. Among those are 540 native children and 230 children with migration background. We define children with migration background as children who are either *a*) German-born with at least one of their parents being not German-born, or *b*) not German-born, but migrated to Germany when they were younger than 6 years.[6]

Table 3.1 displays summary statistics of individual and household characteristics in our sample by migration background. Second-generation migrants differ from natives when they are 10 years old. The household income of migrants is on average lower than in native households and there are more children in migrant households. Importantly, the difference with respect to the parents' years of education is substantial as native parents spent on average 1.5 years more in education than migrant parents. Mothers of migrants are significantly less likely to work. Their fathers are

[4] See Wagner et al. (2007) for a comprehensive description of this data set.

[5] Ochsen (2011) also analyzes recommendations using SOEP data. Recommendations for secondary schooling are also included in an extension to the German PISA 2000 study, as well as in the PIRLS 2001 study (PISA-E and PIRLS-E).

[6] The mandatory school entrance age is 6 years in Germany.

Table 3.1: Descriptive Statistics I (Individual and Household Characteristics)

	Natives	Migrants	t-stat
Male	0.519 (0.500)	0.413 (0.493)	2.689***
Logarithm household income	8.120 (0.405)	7.958 (0.373)	5.214***
Number of children in household	2.213 (0.954)	2.509 (1.337)	–3.470***
Single parent household	0.067 (0.250)	0.061 (0.240)	0.298
Parents' years of education	12.416 (2.387)	10.943 (2.298)	7.924***
Mother working	0.643 (0.480)	0.422 (0.495)	5.792***
Father not working	0.033 (0.180)	0.130 (0.338)	–5.183***
Father blue-collar worker	0.311 (0.463)	0.565 (0.495)	–6.814***
Father self-employed	0.130 (0.336)	0.074 (0.262)	2.240**
Father employee	0.424 (0.495)	0.217 (0.413)	5.563***
Father civil servant	0.102 (0.303)	0.013 (0.114)	4.320***
Mother's age	38.307 (4.491)	36.317 (5.375)	5.296***
Father's age	41.044 (5.435)	39.183 (6.494)	4.097***
# Observations	540	230	

Source: SOEP, own calculations.
Notes: Natives: German-born and German citizen, and parents German-born; migrants: German-born, but not German citizen or at least one parent not German-born, or not German-born, but migrated to Germany when younger than 6 years. Standard deviations in parentheses.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

also less likely to be employed – and if they are employed, most of them are blue-collar workers. Finally, both immigrant fathers and mothers are on average slightly younger than their native counterparts.

Table 3.2 shows the distribution of individuals in our sample across Germany's federal states and according to the population size of the respective region of residence. First, we observe significant differences in the shares of migrants and natives in the federal states. Second, migrants are more likely to live in relatively densely populated regions. Therefore, the regional distribution of migrants indicates important differences when compared to natives.

The information displayed in Table 3.3 shows that more than half of the migrant children in our sample have a migration background in one of the former guest worker countries. Roughly one fourth of the children in our sample is of Turkish origin.

To investigate the native-migrant gap at different stages throughout pupils' progression in the German education system, we examine three outcome variables: *a*) teacher recommendations received at the end of primary school, *b*) actual first enrollment in one of the three secondary school types, and *c*) track attendance at

Table 3.2: Descriptive Statistics II (Regional Characteristics)

	Natives	Migrants	t-stat
Bavaria	0.176 (0.381)	0.109 (0.312)	2.360**
Schleswig-Holstein	0.065 (0.246)	0.022 (0.146)	2.472**
Hamburg	0.007 (0.086)	0.017 (0.131)	–1.250
Lower Saxony	0.106 (0.308)	0.148 (0.356)	–1.664*
North Rhine-Westphalia	0.270 (0.445)	0.270 (0.455)	0.023
Hesse	0.078 (0.268)	0.039 (0.194)	1.976**
Rhineland-Palatinate, Saarland	0.102 (0.303)	0.117 (0.323)	–0.639
Baden-Wuerttemberg	0.178 (0.383)	0.243 (0.430)	–2.100**
Berlin	0.019 (0.135)	0.035 (0.184)	–1.367
Region of residence population <20k	0.515 (0.500)	0.361 (0.481)	3.952***
Region of residence population 20k–100k	0.257 (0.438)	0.278 (0.449)	–0.601
Region of residence population 100k–500k	0.135 (0.342)	0.222 (0.416)	–3.004***
Region of residence population >500k	0.093 (0.290)	0.139 (0.347)	–1.918*
# Observations	540	230	

Source: SOEP, own calculations.
Notes: Natives: German-born and German citizen, and parents German-born; migrants: German-born, but not German citizen or at least one parent not German-born, or not German-born, but migrated to Germany when younger than 6 years. No individual in our sample lives in Bremen. Standard deviations in parentheses.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 3.3: Descriptive Statistics III (Migration Background)

Country of Origin (Parents)	Percent
Turkey	27.39
Italy	10.87
Former Yugoslavia	7.39
Greece	5.22
Spain	3.48
Russia/Former Soviet Republics	13.48
Poland	10.43
Other Countries	21.74
# Observations	230

Source: SOEP, own calculations.
Note: Migrants: German-born, but not German citizen or at least one parent not German-born, or not German-born, but migrated to Germany when younger than 6 years.

age 17, i.e. when children answer the SOEP youth questionnaire. If children are not enrolled at the age of 17 years, the latter measure indicates the highest secondary school degree. Throughout this chapter, we use the term "education outcomes" for the outcome variables we consider. While this might be correct in an empirical sense, we should at this point acknowledge the distinction between education *outcomes* and education *choices*. In our context, at least the first enrollment decision reflects a choice of the child and/or the parents rather than an education outcome in the narrow sense. However, adequately assessing such education choices would require a structural approach which is beyond the scope of this chapter. We therefore use the term education outcomes throughout our reduced form analysis, although we are aware of its inaccuracy for describing some of our outcome variables. This should not affect our findings, but it may be relevant for their interpretation.

The education outcomes of migrant and native children are depicted in Table 3.4. The distribution of recommendations shows important differences between migrant and native children. Whereas more than half of the native children are recommended to attend upper secondary school, this is the case for only about one third of the migrant children. About one in four migrant children are recommended to enter lower secondary school. Only 17 percent of native children receive such a recommendation. It thus appears that a considerable larger share of migrant children receive recommendations for lower types of secondary schooling. This picture changes only slightly when looking at which type of secondary school the children actually enroll in. About one third of the migrant children in our sample enroll in each secondary school type, whereas half of the native children enroll in an upper secondary school. The other half of native children distributes evenly across the remaining two types of secondary schools.[7] When considering the educational attainment around the age of 17 years, we note some upward mobility over time. However, the differences between native and migrant children persist. It is still the case that relatively more native children attain upper secondary schooling, whereas more migrant children attain the lowest secondary schooling track.

The descriptive analysis shows that next to migrant and native pupils' education outcomes, migrant parents' human capital endowment and socioeconomic status differ from average native parents' characteristics. The regional distribution of native and migrant families is also different. Because these characteristics are potentially

[7]There are some observable downward deviations of first secondary school enrollment compared with previous teacher recommendations. However, further analysis (available upon request) shows that this behavior does not systematically differ between native and migrant children.

Table 3.4: Descriptive Statistics IV (Education Outcomes)

	Natives	Migrants	t-stat
Recommendation			
Lower Secondary School	0.170 (0.376)	0.257 (0.438)	–2.766***
Intermediate Secondary School	0.304 (0.460)	0.409 (0.493)	–2.836***
Upper Secondary School	0.526 (0.500)	0.335 (0.473)	4.935***
First Enrollment			
Lower Secondary School	0.239 (0.427)	0.339 (0.474)	–2.883***
Intermediate Secondary School	0.256 (0.437)	0.339 (0.474)	–2.368**
Upper Secondary School	0.506 (0.500)	0.322 (0.468)	4.754***
Latest Enrollment			
Lower Secondary School	0.072 (0.259)	0.143 (0.351)	–3.124***
Intermediate Secondary School	0.367 (0.482)	0.447 (0.498)	–2.112**
Upper Secondary School	0.561 (0.497)	0.409 (0.493)	3.907***
# Observations	540	230	

Source: SOEP, own calculations.
Note: Natives: German-born and German citizen, and parents German-born; migrants: German-born, but not German citizen or at least one parent not German-born, or not German-born, but migrated to Germany when younger than 6 years. Standard deviations in parentheses.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

important determinants of education outcomes, our subsequent analysis decomposes the native-migrant education gap into a part explained by socioeconomic family background and a migrant-specific part.

3.4 Empirical Approach

One important aspect when analyzing and comparing the education outcomes of migrant children with those of their native peers is to adequately take into account that second-generation migrants grow up in households which substantially differ from the average native household. This leaves us with a decomposition problem. One part of the native-migrant gap in education outcomes can be attributed to differences in average socioeconomic background characteristics between the two groups. The second part is due to differences in average returns to these characteristics, which are specifically associated with pupils' migration background and may reflect migrant-specific barriers to educational progression (e.g., language skills or discrimination). To isolate these two parts, we employ two different approaches: *a*) a linear (OLS) decomposition, and *b*) a decomposition using matching techniques.

This decomposition strategy is similar to Caliendo and Lee (2012) who decompose differences in the job search behavior between obese and non-obese individuals.

Linear decomposition methods are widely used in the literature to measure unexplained gaps in mean outcomes between population groups of interest. A common approach is based on the seminal work by Blinder (1973) and Oaxaca (1973). Omitting the details, Elder et al. (2010) show that a seemingly naïve OLS regression including a group indicator variable is an attractive option to obtain a single measure of the unexplained gap. The authors show that under certain conditions, the coefficient on the group indicator variable is a weighted average of the unexplained gaps from the two standard Blinder-Oaxaca approaches. In a first step, we therefore follow this approach to decompose the native-migrant gap in education outcomes.[8]

We additionally employ matching techniques as an alternative decomposition strategy. Although these methods are primarily used in the evaluation literature to estimate treatment effects (see, e.g., Rinne et al., 2011), matching estimators are also employed to measure unexplained gaps (Frölich, 2007; Nopo, 2008; Kiss, 2011). It is important to note that imposing the usual conditional independence assumption is not necessary in this context. Any unobserved variable will contribute to the residual term, i.e. the unexplained part of the gap. More specifically, we use a propensity score matching method of which there are several suggested in the literature (see, e.g., Caliendo and Kopeinig, 2008, for an overview). Based on the characteristics of our data, we apply kernel matching. This nonparametric matching algorithm has advantages in relatively small samples because it uses weighted averages of (nearly) all individuals in the control group to construct the counterfactual outcome.

When comparing linear and matching decompositions, there are distinctive features that justify using both estimators. First, the two approaches place different weights on observations in the population groups of interest (see Angrist and Pischke, 2008, p. 76, for a discussion). Second, the matching decomposition does not specify the regression function as linear. Third, the matching decomposition imposes a common support restriction. In contrast, linear decompositions are based on the assumption that estimations are also valid in regions of the data where there is no support of individual characteristics.

[8]Empirical applications using linear decomposition methods include Neal and Johnson (1996) who decompose racial wage gaps and Fryer and Levitt (2004) who decompose racial test score gaps.

3.5 Results

We consider three different outcome variables. First, we look at the recommendations each child receives when he or she leaves primary school. Second, we investigate the actual transitions to one of the three different secondary schooling types. Finally, we assess the educational attainment when the child answers the youth questionnaire. For each outcome, we analyze two dummy variables: *a*) an indicator for the upper and intermediate secondary schooling track, and *b*) an indicator for the upper secondary schooling track. In this way, we respect the ordinal nature of our outcome measures. At the same time, this approach allows for investigating the respective gaps with regard to each schooling level.

3.5.1 Linear Decomposition

Table 3.5 displays the results of the linear (OLS) decomposition. When only controlling for gender and differences in the regional distribution of migrant and native families, we observe significant and substantial native-migrant gaps in all three outcome variables. Migrant children are about 10 percentage points more likely to receive a recommendation for the lower secondary school track, and they are 20 percentage points less likely to be recommended to the upper secondary school track. These gaps only marginally change when we consider the actual enrollment as outcome variable. When considering the educational attainment at a later stage, the differences slightly decrease, but remain significant. Around the age of 17 years, migrant children are about 7 percentage points more likely to attend the lower secondary school track and roughly 16 percentage points less likely to attain the upper secondary school track. The barrier to be recommended to and to enroll in upper secondary school therefore appears particularly relevant for migrant children. This is an important first result, especially when considering that only this school degree allows a direct university enrollment afterwards.

However, the picture entirely changes once we take family background and household characteristics into account. When including variables such as household income and parents' years of education, the conditional native-migrant gap becomes virtually zero for all three outcomes. The coefficient estimate on the migrant indicator variable is insignificant in all cases. The differences in socioeconomic family background therefore seem to account for the entire gap in education outcomes between migrant children and their native peers. In other words, we observe no

Table 3.5: Linear Decomposition (OLS, Full Sample)

	(1)	(2)	(3)	(4)
Recommendation	*Upper/Int. vs. Lower Track*		*Upper vs. Int./Lower Track*	
Migration Background	–0.101***	–0.006	–0.199***	–0.021
	(0.03)	(0.03)	(0.04)	(0.04)
Regional Characteristics	Yes	Yes	Yes	Yes
Household Characteristics	No	Yes	No	Yes
Parental Characteristics	No	Yes	No	Yes
N	770	770	770	770
R^2	0.058	0.137	0.077	0.248
AIC	744.9	701.5	1081.0	947.0
BIC	809.9	822.3	1146.0	1067.8
First Enrollment	*Upper/Int. vs. Lower Track*		*Upper vs. Int./Lower Track*	
Migration Background	–0.112***	0.020	–0.189***	–0.008
	(0.04)	(0.04)	(0.04)	(0.04)
Regional Characteristics	Yes	Yes	Yes	Yes
Household Characteristics	No	Yes	No	Yes
Parental Characteristics	No	Yes	No	Yes
N	770	770	770	770
R^2	0.138	0.259	0.098	0.296
AIC	846.6	753.3	1058.9	891.9
BIC	911.6	874.1	1124.0	1012.7
Latest Enrollment	*Upper/Int. vs. Lower Track*		*Upper vs. Int./Lower Track*	
Migration Background	–0.071**	0.015	–0.161***	0.024
	(0.03)	(0.03)	(0.04)	(0.04)
Regional Characteristics	Yes	Yes	Yes	Yes
Household Characteristics	No	Yes	No	Yes
Parental Characteristics	No	Yes	No	Yes
N	770	770	770	770
R^2	0.030	0.134	0.075	0.276
AIC	289.2	226.5	1085.0	920.4
BIC	354.3	347.3	1150.0	1041.2

Source: SOEP, own calculations.
Note: Clustered standard errors by household in parentheses. Regional characteristics: federal states, population density. Household characteristics: household income, number of children, single parent household. Parental characteristics: parents' years of education, age, employment status. Other control variable: gender.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 3.6: Matching Decomposition (Kernel Matching, Full Sample)

Outcome	Sample	Migrants	Natives	Difference	SE
Recommendation	Unmatched	0.743	0.830	–0.086***	0.031
(*Upper/Intermediate vs. Lower Track*)	Matched	0.743	0.736	0.007	0.050
Recommendation	Unmatched	0.335	0.526	–0.191***	0.039
(*Upper vs. Intermediate/Lower Track*)	Matched	0.335	0.398	–0.064	0.048
First Enrollment	Unmatched	0.661	0.761	–0.100***	0.035
(*Upper/Intermediate vs. Lower Track*)	Matched	0.661	0.673	–0.012	0.051
First Enrollment	Unmatched	0.322	0.506	–0.184***	0.039
(*Upper vs. Intermediate/Lower Track*)	Matched	0.322	0.359	–0.038	0.048
Latest Enrollment	Unmatched	0.857	0.928	–0.071***	0.023
(*Upper/Intermediate vs. Lower Track*)	Matched	0.857	0.839	0.017	0.047
Latest Enrollment	Unmatched	0.409	0.561	–0.152***	0.039
(*Upper vs. Intermediate/Lower Track*)	Matched	0.409	0.418	–0.009	0.053
# Observations Total			770		
# Observations On Support			770		

Source: SOEP, own calculations.
Note: Standard errors are bootstrapped (200 replications).
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

particular barrier for migrant children to be recommended to and be placed into upper secondary school once background characteristics are taken into account.

3.5.2 Matching Decomposition

Table 3.6 presents the decomposition results based on propensity score matching. As stated above, we obtain these results by kernel matching.[9] The matching quality is satisfactory. The overlap between the groups of migrant children and native children is sufficient in our sample and, hence, we do not drop any observations due to the common support restriction.[10] After matching, mean standardized differences are substantially reduced, any significant differences in the means of the covariates disappear, and the pseudo-R^2 is low.[11] This indicates that no systematic differences between the two groups of migrant and native children remain.

The results of the matching decomposition basically mirror the results of the lin-

[9]The matching algorithm is implemented using the `PSMATCH2` Stata ado-package by Leuven and Sianesi (2003). Throughout this chapter, the decomposition results using kernel matching are based on a bandwidth parameter of 0.06. Results remain virtually the same with bandwidth parameters of 0.02 and 0.2.
[10]See Figure A1 (Appendix A) for a visual impression of the propensity score distributions.
[11]See Table A1 (Appendix A) for a summary of the matching quality.

ear decomposition. The significant native-migrant differences in the three outcome variables that exist before matching disappear after matching and become insignificant. This again shows that differences in socioeconomic family background entirely explain the observed gaps between migrant and native children. However, although the estimates lack statistical significance, the matching decomposition indicates that some economic significance of the unexplained gap remains. Controlling for socioeconomic family background, migrants are about 6 percentage points (4 percentage points) less likely to be recommended for (to enroll in) the upper secondary school track. These estimates are about three times larger than in the linear decomposition. However, with respect to our third outcome which is measured at a later stage of secondary education, there is no evidence of any unexplained part of the gap. The estimate is virtually zero. These findings may tentatively indicate that moving along secondary schooling, there is some room for migrant children to use second chances and to improve their relative position with respect to native children over time.

3.6 Sensitivity Analysis

We assess the robustness of our main results in several dimensions. First, we include a measure of cognitive ability in our analysis. Second, we split our sample according to socioeconomic family background. In these two dimensions, we only report the results of matching decompositions as linear decompositions lead to similar results. Finally, we briefly summarize the results of additional robustness checks.

3.6.1 Ability

One potentially important, but so far omitted factor is the children's cognitive ability. It might be of particular importance in our context since pupils are supposed to be tracked according to their ability. *A priori* and conditional on socioeconomic background, there seems to be no obvious reason to expect differences in the ability distributions of migrant and native children. It is, however, possible that parental production functions of immigrant parents systematically deviate from those of native parents or that there is variation in some unobserved characteristics between migrant and native families. Conditional on cognitive ability, migrant and native pupils might also be differently affected by or able to cope with a disadvantaged family background. We therefore include a measure of cognitive skills in this part

Table 3.7: Matching Decomposition (Kernel Matching, Ability Sample)

Outcome	Sample	Migrants	Natives	Difference	SE
Recommendation	Unmatched	0.739	0.830	–0.090**	0.040
(*Upper/Intermediate vs. Lower Track*)	Matched	0.750	0.646	0.104	0.086
Recommendation	Unmatched	0.341	0.524	–0.184***	0.050
(*Upper vs. Intermediate/Lower Track*)	Matched	0.367	0.314	0.053	0.078
First Enrollment	Unmatched	0.645	0.752	–0.107**	0.046
(*Upper/Intermediate vs. Lower Track*)	Matched	0.692	0.676	0.043	0.079
First Enrollment	Unmatched	0.290	0.492	–0.202***	0.050
(*Upper vs. Intermediate/Lower Track*)	Matched	0.317	0.326	–0.002	0.066
Latest Enrollment	Unmatched	0.862	0.929	–0.067**	0.029
(*Upper/Intermediate vs. Lower Track*)	Matched	0.883	0.791	0.110	0.079
Latest Enrollment	Unmatched	0.384	0.537	–0.153***	0.051
(*Upper vs. Intermediate/Lower Track*)	Matched	0.408	0.335	0.083	0.074
# Observations Total			449		
# Observations On Support			431		

Source: SOEP, own calculations.
Note: Besides the usual control variables, we additionally control for cognitive abilities, which are measured in the SOEP youth questionnaire since 2006. See main text for further details. Standard errors are bootstrapped (200 replications).
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

of our analysis.

Similar to our main decomposition exercise, we decompose the native-migrant gap into a part explained by average background characteristics as well as cognitive skills, and into an unexplained part which possibly reflects migrant-specific factors. We use a measure of cognitive skills that is available for a subgroup of individuals in our sample. It is part of the SOEP's youth questionnaire since 2006.[12] This ability measure includes three dimensions of cognitive skills testing verbal, numerical and figural potentials. Importantly, it is argued that fluid rather than crystallized intelligence is captured (Solga et al., 2005). The measure should thus reflect inherent abilities which are stable over time and are not influenced by education, experiences and the course of life.[13] Given that this assumption holds, we can use this measure even though it is elicited only around the age of 17 years in our data.

Table 3.7 displays the results of the matching decomposition when we include this ability measure. Information on cognitive skills is available for 449 individuals. Among those are 138 children with a migration background. We exclude 18

[12]See Solga et al. (2005) and Schupp and Herrmann (2009) for a general description. Studies using this measure include Uhlig et al. (2009) and Protsch and Dieckhoff (2011).
[13]See Cattell (1987) for a discussion of the distinction between fluid and crystallized intelligence.

observations due to the common support restriction. The results for the unmatched sample are very similar to our full sample results, both with respect to magnitude and statistical significance. We find negative differences for every outcome between the native and migrant group. However, results after matching are slightly different than in the full sample. The native-migrant gaps remain insignificant, but they turn positive for all but one outcome variable in the matched sample. These positive differences are moreover in some cases quite substantial as they exceed 10 percentage points for two of our outcome variables. Given the same socioeconomic family background *and* the same cognitive ability, migrant children appear *less* likely to be recommended for the lowest secondary school track than native children. We find a similar result for the latest enrollment at this type of secondary school. Importantly, these changes compared to our main results are not due to the reduced sample, but due to the inclusion of the ability measure.[14]

These tentative findings seem to be roughly in line with Luthra (2010). Similar to her results, we find at least a weak indication of a possible migrant *advantage* over native children when we additionally include a measure of cognitive ability. This could potentially point to migrant-specific factors actually working in a different direction than expected. For example, there could be positive discrimination *in favor* of migrant children – at least once they share the same cognitive skills and background characteristics as their native peers. Alternatively, migrant children with similar inherent ability may be better able to cope with a disadvantaged background than native children.

3.6.2 Socioeconomic Status

The main argument to split the sample according to socioeconomic family background is that migrant families with low socioeconomic status are overrepresented in the full sample. To see whether effects are heterogeneous with respect to family background, we use net household income as an approximation of socioeconomic status and split the full sample at the median income of migrant families.[15]

Table 3.8 displays the matching decomposition results for the low income sample. With 261 observations, its sample size is approximately one third of the full sample. Among the observations are 116 migrant children, from which 2 observations lack comparable native children. The native-migrant education gaps before matching are

[14]Results for the reduced sample *without* including the ability measure are available upon request.
[15]The median net household income of migrant families is € 2744.82 in the full sample.

Table 3.8: Matching Decomposition (Kernel Matching, Low Income Sample)

Outcome	Sample	Migrants	Natives	Difference	SE
Recommendation	Unmatched	0.681	0.731	–0.050	0.057
(*Upper/Intermediate vs. Lower Track*)	Matched	0.684	0.584	0.100	0.102
Recommendation	Unmatched	0.250	0.366	–0.116**	0.058
(*Upper vs. Intermediate/Lower Track*)	Matched	0.246	0.243	0.003	0.081
First Enrollment	Unmatched	0.578	0.634	–0.057	0.061
(*Upper/Intermediate vs. Lower Track*)	Matched	0.588	0.577	0.011	0.098
First Enrollment	Unmatched	0.259	0.352	–0.093	0.058
(*Upper vs. Intermediate/Lower Track*)	Matched	0.263	0.238	0.025	0.081
Latest Enrollment	Unmatched	0.819	0.855	–0.036	0.046
(*Upper/Intermediate vs. Lower Track*)	Matched	0.816	0.798	0.017	0.089
Latest Enrollment	Unmatched	0.319	0.448	–0.129**	0.060
(*Upper vs. Intermediate/Lower Track*)	Matched	0.316	0.295	0.021	0.086
# Observations Total			261		
# Observations On Support			259		

Source: SOEP, own calculations.
Notes: The low income sample includes observations for which the household income is below the median household income of migrant families. Standard errors are bootstrapped (200 replications).
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

negative, but not as substantial as in the full sample. Moreover, most differences lack statistical significance – which could be due to the smaller sample size. All differences turn positive after matching, but they are not statistically different from zero. Aside from the small sample size, this seems to indicate that native children from families with low socioeconomic background face similar difficulties in the education system as migrant children with similar background. Moreover, there are indications that unexplained gaps between these two groups do not exist even *before* matching.

Table 3.9 displays results of the matching decomposition for the high income sample. This sample comprises 502 observations, of which 114 children are from migrant families. 10 of these migrant children lack comparable natives and are thus excluded. The results in this sample are similar to the full sample results. Before matching, there are significant native-migrant education gaps in terms of almost all outcomes. These differences are comparable in magnitude to the full sample results – if at all, they are slightly less pronounced. After matching, the differences decrease and some even turn slightly positive, but the gaps do not exhibit statistical significance anymore.

The results for these two samples therefore underline the importance of controlling for socioeconomic background characteristics. Whereas native and migrant

Table 3.9: Matching Decomposition (Kernel Matching, High Income Sample)

Outcome	Sample	Migrants	Natives	Difference	SE
Recommendation	Unmatched	0.807	0.863	–0.056	0.038
(*Upper/Intermediate vs. Lower Track*)	Matched	0.808	0.790	0.018	0.066
Recommendation	Unmatched	0.421	0.585	–0.164***	0.053
(*Upper vs. Intermediate/Lower Track*)	Matched	0.433	0.493	–0.060	0.081
First Enrollment	Unmatched	0.746	0.807	–0.061	0.043
(*Upper/Intermediate vs. Lower Track*)	Matched	0.750	0.722	0.028	0.068
First Enrollment	Unmatched	0.386	0.562	–0.176***	0.053
(*Upper vs. Intermediate/Lower Track*)	Matched	0.394	0.453	–0.059	0.076
Latest Enrollment	Unmatched	0.895	0.954	–0.059**	0.025
(*Upper/Intermediate vs. Lower Track*)	Matched	0.894	0.918	–0.023	0.052
Latest Enrollment	Unmatched	0.500	0.598	–0.098*	0.053
(*Upper vs. Intermediate/Lower Track*)	Matched	0.519	0.478	0.041	0.084
# Observations Total			502		
# Observations On Support			492		

Source: SOEP, own calculations.
Notes: The high income sample includes observations for which the household income is above the median household income of migrant families. Standard errors are bootstrapped (200 replications).
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

children from households in the lower part of the income distribution appear to differ not much in terms of education outcomes (even without controlling for additional characteristics, i.e. before matching), children in the upper part do substantially differ in this regard. The native-migrant education gaps only disappear for those children once we carefully control for differences in socioeconomic background characteristics.

3.6.3 Additional Robustness Checks

We perform four additional sensitivity analyses concerning the composition of our sample (results not reported here). First, we restrict the sample to second-generation migrants in a more narrow sense, i.e. children with *two* immigrant parents, thus excluding children with one migrant and one native parent. Second, we only consider children who attended pre-school education. In our sample, migrants are about 8 percentage points less likely to attend pre-school education than natives – and almost every native child (about 97 percent) attends pre-school education. Third, we assess the sensitivity of our results concerning different legislations with respect to teachers' recommendations. In some federal states – namely Schleswig-Holstein,

Hamburg, Lower Saxony, North-Rhine Westphalia, Hesse, Rhineland-Palatinate, Saarland and Berlin – recommendations are not necessarily binding. We therefore only consider families living in federal states with non-binding recommendations. These three robustness checks yield similar results to those obtained using the full sample.

Fourth, we are concerned about the migrant children's diverse ethnic backgrounds, i.e. the countries their parents originally came from. Migrant-specific factors might be more or less prevalent for different ethnic groups due to, e.g., cultural distance to Germany. Unfortunately, the number of observations in our data is too low to perform the decomposition analysis on each ethnic group separately. We therefore conduct our main analysis solely considering migrant children with a guest worker background. This group of second-generation migrants is the largest in our sample and also the one with the least favorable family background. Qualitatively, the results are similar to our main results. After matching, however, we find that guest worker migrant children are still significantly less likely to receive recommendations for and to enroll at the upper secondary school. Both gaps amount to 13 percentage points. These results suggest that for this group, migrant-specific factors seem to play a role at earlier stages in the education system. However, in line with our main results, the unexplained part of the gap disappears when these children progress in the education system, i.e. when considering track attendance at the age of 17.

3.7 Conclusions

Education is widely perceived as the main channel through which migrant families could economically catch up with natives. Although there is some intergenerational progress in education outcomes for second-generation migrants, the performance deficits in comparison to native peers remain substantial. This paper therefore investigates to what extent the native-migrant education gap in Germany is due to compositional differences in parental background and household characteristics between these two groups, and to what extent it is associated with migrant-specific or other factors. In other words, if migrant and native children shared the same socioeconomic background, would we still observe differences in education outcomes?

To answer this question, we apply two different decomposition strategies: linear decompositions as well as decompositions based on matching techniques. Moreover, we examine the issue with respect to three outcomes related to secondary school

placement following the same individuals over time. In particular, we study whether migrant and native children receive different teacher recommendations by the end of primary school, whether they actually enroll in different school types and whether there are differences in educational enrollment at age 17. Our results suggest that, conditional on socioeconomic background, migrant pupils are equally likely to receive recommendations for or to enroll at any secondary school type. Also the gap in education outcomes at age 17 appears to be explained entirely by differences in socioeconomic family background. Hence, there is no indication that a migration background *per se* hinders the educational progression of second-generation migrants (in recent years). Our findings thus point at more general inequalities in the transition to secondary schooling rather than at a migrant-specific problem.

There are some characteristics of Germany's education system that appear related to our findings (see, e.g., Crul and Vermeulen, 2003). For example, children enter school only at the age of 6 years, and thus a very important stage in the children's development process has already passed. Moreover, most children attend school on a half-day basis and face-to-face contact hours with teachers are below average. Germany also tracks relatively early by international standards. Children from families with a disadvantaged socioeconomic background are thus given little time to pull themselves out of their disadvantaged starting position. Finally, Germany is well below average with respect to the amount of supplementary help and support available to children inside and outside school. Although all these factors may create migrant-specific barriers to educational progression, they seem to create similar barriers for natives from a disadvantaged family background. Future research may analyze the channels through which this "socioeconomic" gap exactly emerges. It may also be interesting to investigate whether and how this gap affects labor market outcomes.

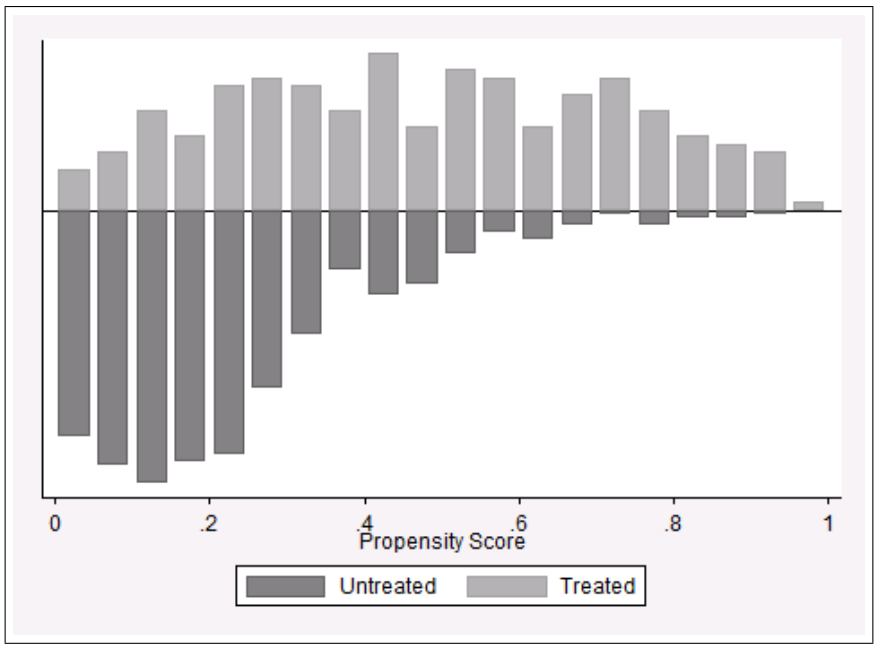
Appendix A

Table A1: Summary of Matching Quality (Full Sample)

	Before Matching	After Matching
Mean Standardized Difference	25.673	5.406
Median Standardized Difference	21.247	4.230
Pseudo-R^2	0.212	0.020

Source: SOEP, own calculations.

Figure A1: Distribution of Propensity Scores (Full Sample)



Source: SOEP, own calculations.
Note: Treated: migrant children; untreated: native children.

Chapter 4

The Effects of 9/11 on Attitudes Toward Immigration and the Moderating Role of Education*

4.1 Introduction

Several recent studies have examined whether the terrorist attacks in the US on September 11, 2001 (9/11) increased labor market discrimination toward certain minorities, not only in the US (e.g. Dávila and Mora, 2005; Orrenius and Zavodny, 2009; Kaushal et al., 2007; Rabby and Rodgers, 2011), but also in other countries such as Canada (Shannon, 2012), Australia (Goel, 2010), the UK (Braakmann, 2010; Rabby and Rodgers, 2010), Sweden (Åslund and Rooth, 2005) and Germany (Braakmann, 2009; Cornelissen and Jirjahn, 2012). These studies are based on two assumptions. First, that the 9/11 attacks had a direct and significant enough impact on individuals' attitudes, resulting in an increase in discriminatory behavior toward immigrants as a group or certain minorities. Second, the terrorist attacks in the US are assumed to have caused negative international spillover effects to public sentiments toward minority groups in other countries. The existing empirical literature relies on evidence from aggregate time trends that indicate, for example, dramatic increases in hate crimes against Muslims in the aftermath of the 9/11

*This chapter is based on the discussion paper "The Effects of 9/11 on Attitudes Toward Immigration and the Moderating Role of Education" (see Schüller, 2012).

attacks, not only in the US but also beyond its borders. Overall, it is unsurprising that a large-scale terror event such as 9/11 fueled acts of anti-immigrant or anti-Muslim aggression and hostility. However, it remains to be seen whether these events caused attitude shifts among the wider society, and whether such an impact was uniform across all types of individuals.

Furthermore, it is not a priori clear whether countries other than the US would experience a similarly severe increase in anti-immigrant or anti-Muslim attitudes. Indeed, with respect to European countries, the few existing studies find no clear evidence that the 9/11 events significantly worsened the labor market outcomes of target minorities (Åslund and Rooth, 2005; Braakmann, 2009, 2010; Rabby and Rodgers, 2010; Cornelissen and Jirjahn, 2012). One possible explanation might be that attitudinal changes were, on average, less severe in Europe than in the US and hence did not translate into increased discriminatory behavior (Braakmann, 2009). Another line of argumentation points toward more rational hiring policies of European employers (Åslund and Rooth, 2005) or to highly institutionalized labor markets (Braakmann, 2010). Using German data, Cornelissen and Jirjahn (2012) emphasize the importance of heterogeneity. They find negative 9/11-effects in terms of wage discrimination to be prevalent among low-skilled Muslim employees, and not among the higher skilled Muslims. Assuming that low-skilled Muslims have low-skilled German superiors and co-workers, they indirectly attribute this finding to a moderating effect of education in xenophobic attitudes. To date, however, no empirical study has attempted to establish a direct causal connection between the 9/11 incident and attitude shifts in the overall population, either in the US or beyond its borders, and little is also known about heterogeneous effects in this context.

This study offers the first empirical analysis to test the causality of the relationship between a major event such as the 9/11 terror attacks and individual immigration-related attitudes, controlling for aggregate time trends. Besides documenting whether the events of 9/11 resulted in attitudinal changes toward immigration outside the US in a European country, this analysis also contributes more generally to the literature concerned with the extent to which people's views about immigration are driven by factors other than economic self-interest. Several recent studies have consistently found a significant and positive relationship between education or skill levels among individuals and their views about immigration (e.g. Scheve and Slaughter, 2001; Mayda, 2006). While these findings have been interpreted as a reflection of labor-market dynamics, where low-skilled workers are most opposed to low-skilled immigration due to realistic fears about labor market competition, an-

other line of scholars have questioned this interpretation. For example, Card et al. (2012), Dustmann and Preston (2007) and Hainmueller and Hiscox (2007, 2010) find that a large component of the effect of education on individual attitudes toward immigration is associated with differences in cultural values and beliefs rather than with fear of labor market competition. The contribution of this chapter to this strand of literature is twofold. First, utilizing the 9/11 events as an exogenous, non-economic shock, I am able to isolate non-economic drivers of immigration-related attitudes, identifying the extent to which education plays a moderating role in attitude formation in the absence of a realistic threat of economic competition. Second, exploiting intra-individual variation in attitudes over time represents an important contribution to a literature that has been exclusively based on cross-sectional comparisons to date.

Using longitudinal data from the German Socio-Economic Panel (SOEP) allows to examine the impact of the 9/11 attacks on the attitudes of German residents in a quasi-experimental setting. I exploit the fact that annual survey interviews are randomly completed throughout the year, in comparing the attitude levels of pre- and post-9/11 respondents in 2001, and relating these attitudes to the respective attitude levels of the same respondents one year prior. This provides approximate estimates of the causal impact of the terror attacks on the attitudes of the German population toward immigration.[1] Furthermore, I examine two types of immigration-related attitudes – individuals' concerns over immigration and people's concerns over xenophobic hostility – presuming that the former is mainly associated with evaluations of immigration policies and perceived consequences for the host country, while the latter is more likely related to ethnic prejudice or discrimination (Bauer et al., 2000; Ceobanu and Escandell, 2010).

Indeed, I find a non-negligible shift to more negative attitudes toward immigration among German residents as a result of the 9/11 terrorist attacks. At the same time, the attacks resulted in decreasing concerns over hostility toward foreigners. Moreover, I find no evidence of the 9/11 events causing similar changes in individuals' worries about overall economic development or crime in Germany, which confirms the non-economic nature of the 9/11 shock on immigration-related attitudes. Hence, these results confirm the importance of cultural prejudice in driving immigration-related attitudes and emphasize that public attitude shifts can be

[1] Similar strategies have been used by Metcalfe et al. (2011) to analyze 9/11-effects on subjective well-being in the UK, and by Goel (2010) to investigate changes in immigrants' perceptions of racial intolerance and labor market outcomes in Australia as a consequence of 9/11.

potentially triggered by major events such as the 9/11 attacks.

Further investigation shows that a significant 9/11 impact on attitudes toward immigration is mainly prevalent among respondents with below-average education levels, while I find no evidence of a significant attitude shift among highly educated individuals. These results are consistent with a moderating role of education in the attitudinal response to the 9/11 attacks. Yet, in terms of concerns about xenophobic hostility, both high- and low-educated respondents reacted equally strongly to the attacks with lower worries about hostility. This might be interpreted as evidence for the limited potential of education to fully shield from non-economic attitude shocks.

The chapter is organized as follows. The next section provides a brief summary of existing evidence on negative attitude shifts in the aftermath of 9/11 in countries outside the US, with a particular focus on Germany. In Section 4.3, the data and the employed empirical strategy are introduced. Section 4.4 details the results of the empirical application for Germany, and Section 4.5 concludes.

4.2 Background

4.2.1 9/11 and Anti-Immigrant Attitudes

Evidence from aggregate time trends suggests that anti-Muslim sentiments and xenophobic aggression increased considerably among the US population in the aftermath of the 9/11 attacks. The American-Arab Anti-Discrimination Committee (2003) reports over 700 incidents targeting Arab Americans or perceived as such, including several murders. Human Rights Watch (2002) and Gould and Klor (2012) refer to data from the FBI Uniform Crime Reporting Program (UCR), showing a 16-fold increase in the reported total number of hate crimes against Muslims from 2000 to 2001.

There is also descriptive evidence that the events of 9/11 had a negative impact on attitudes toward immigration beyond US borders. In Canada, the Toronto Police Service Hate Crime Unit statistics show a 66 percent rise in hostile acts in late 2001 (Helly, 2004, p.26). Åslund and Rooth (2005) cite aggregate statistics from the *Forskargruppen för Samhälls- och Informationsstudier* (FSI), showing an 18-percentage-points drop in the fraction of Swedish respondents expressing positive attitudes toward immigration from 51 percent in the period June–August 2001 to 33 percent from September 11 – September 30. With respect to the German population's reaction in response to the 9/11 attacks, Brosig and Brähler (2002) describe

evidence from four representative opinion surveys collected before and after 9/11, in the form of repeated cross-sections. Their findings suggest a negative change in public attitudes toward certain minority groups, particularly Muslims, with the fraction of respondents who would dislike having Muslims as neighbors rising from 12 percent in June 2001 to 19 percent in April 2002. However, there is no indication that this increase in "social distance" toward Muslims translated into more negative attitudes toward the group of immigrants or foreigners as a whole, as the fraction of respondents expressing a distaste for foreign or guestworker neighbors remained constant at 11 percent. Furthermore, the fear of foreigners in Germany appeared to decrease rather than increase, when comparing 2002 survey responses to results from 1999 (Brosig and Brähler, 2002, p.87–88).

In summary, there are suggestions of a negative attitude shift following the 9/11 terrorist attacks in the US, as well as some suggestive indication that the attacks might have also had an impact on attitudes in European countries. However, this evidence is mainly based on aggregate time trends. To the best of my knowledge, no attempts have been made within existing literature to provide systematic empirical evidence of this relationship and directly test the causality of the effects on attitudes toward immigration. However, this might be largely due to limited data availability, since most surveys of attitudes toward immigrants are collected as cross-sectional data.

4.2.2 The Moderating Role of Education

Insofar as the 9/11 terrorist attacks have triggered negative attitudes, there is no direct evidence on whether the 9/11 events had a uniform effect across the entire society or whether it varied between heterogeneous subgroups of the population.[2] This study offers first exploratory evidence on the types of individuals most affected in terms of immigration-related attitudes, with a focus on individuals' educational attainment.

I draw on previous literature relating to immigration-related attitude formation to differentiate between groups who are likely at high risk of responding to a negative and intense non-economic attitude shock such as the 9/11 attacks, and those who

[2]The most closely related study is Cornelissen and Jirjahn (2012), who find negative 9/11-effects in terms of wage discrimination only among low-skilled Muslim employees, and not among the higher skilled Muslims. Assuming that low-skilled Muslims have low-skilled German superiors and co-workers, they attribute this finding to a moderating effect of education in xenophobic attitudes.

are expected to be at relatively lower risk of changing their minds. Most studies find that education plays a key role in the perception of immigration and immigrants (e.g. Bauer et al., 2000; Scheve and Slaughter, 2001; Mayda, 2006; Dustmann and Preston, 2007; Hainmueller and Hiscox, 2007, 2010). Gang and Rivera-Batiz (1994) and Fertig and Schmidt (2011) confirm the findings of the low-educated holding relatively more negative attitudes in the German context. However, what lies at the heart of the consistently found positive relationship between educational attainment and attitudes toward immigration and immigrants is controversially debated in the economic literature. On the one hand, the fact that the highly educated hold more favorable attitudes may predominantly reflect their labor market position, which is less vulnerable to typically low-skilled immigration. However, on the other hand, it could also reflect the liberizing effect of education per se, resulting in less ethnic prejudice and greater appreciation of cultural diversity among the highly educated.

The context of the 9/11 attacks in 2001 provides a quasi-experimental setting inducing an exogenous shock on individuals' attitudes toward immigrants and immigration. In the following, I will argue that this shock has been non-economic in nature and thus increased perceived cultural rather than economic threat. As will be shown in Section 4.4.1, it appears likely that the attacks may not have been perceived as associated with increased immigration inflows or changes in immigrants' skill composition or productivity. In view of 9/11 as a non-economic exogenous shock and against the background of the previous literature on attitude formation, I thus hypothesize that the attacks had a stronger impact on the attitudes of relatively lower educated than highly educated Germans. I furthermore expect a moderating role of education with respect to both individual concerns over immigration as well as worries about hostility toward foreigners.

Hence, in contrast to the previous literature, the quasi-experimental setting of the 9/11 attacks allows me to go beyond the analysis of cross-sectional associations and examine within-individual variation in attitudinal reactions to the exogenous shock. In this way, I can not only isolate non-economic from economic drivers of immigration-related attitudes, but also overcome omitted variable issues that might potentially bias cross-sectional analysis.

4.3 Data and Empirical Setup

4.3.1 Data

This study examines the effects of 9/11 on attitudes toward immigration among German residents. The terrorist attacks of September 11, 2001 act as an exogenous shock providing a powerful quasi-experiment. I use a large longitudinal dataset, consisting of around 20,000 individuals, which allows controlling for individual heterogeneity and underlying time trends.

The German Socio-Economic Panel (SOEP) is a nationally representative, longitudinal study of private households in Germany, conducted in annual waves starting in 1984.[3] Respondents are interviewed throughout each year between January and October with random timing of the interviews. Although the bulk of interviews usually take place during the first half of each year, a considerable number of respondents are interviewed during the later months.[4] Such data thus provides the unique opportunity to exploit the timing of survey interviews in 2001 to identify 9/11 effects.[5] The completion of interviews by October 2001, however, restricts me to the estimation of immediate short-run effects of the terror attacks.

The two main dependent variables employed in this analysis measure individuals' concerns over immigration to Germany and hostility toward foreigners or minorities in Germany, on a three-point scale ranging from "not at all" to "somewhat" to "very concerned". In 2000, 32.09 percent of native German respondents were very concerned about immigration to Germany, while 21.90 percent where not at all concerned. In the same year, 31.26 percent stated a strong concern over hostility toward foreigners or minorities in Germany, with 16.55 percent not at all worried about this issue.[6] Measures of concern over general economic development and about crime in Germany are scaled in the same way as the main dependent variables.

Two subsamples are considered in the following. The first includes all individuals

[3]See Wagner et al. (2007) for a comprehensive description of this dataset.

[4]In 2001 57 percent of interviews took place in the first quarter, 36 percent in the second, and the rest (8 percent) between July and October.

[5]See Berger (2010) for an example of a previous study exploiting random interview timing in the SOEP, examining the impact of the reactor accident at the Chernobyl nuclear power plant in 1986 on individual life satisfaction and environmental worries. A second example is Caliendo and Wrohlich (2010), who evaluate the causal short-term impact of the German 'Mini-Job' reform.

[6]Note that the correlation between the two outcome measures is rather low, the correlation coefficient amounts to 0.0981 in 2000, which justifies separate estimation models for each dependent variable instead of joint modeling.

Table 3.1: Descriptive Statistics

	Sample 2000-2001			Sample 1999-2003		
	All	Pre-9/11	Post-9/11	All	Pre-9/11	Post-9/11
N	34,653	34,046	607	70,799	69,730	1,069
Worries immigration	2.050	2.050	2.044	2.072	2.072	2.028*
	(0.726)	(0.727)	(0.710)	(0.722)	(0.722)	(0.744)
Worries xenophobic hostility	2.181	2.181	2.163	2.128	2.128	2.112
	(0.679)	(0.680)	(0.641)	(0.666)	(0.667)	(0.655)
Male	0.477	0.477	0.499	0.478	0.478	0.511*
Age	46.546	46.577	44.817*	47.237	47.270	45.065
Ln(net household income)	8.321	8.320	8.412*	8.057	8.056	8.148*
Lower than secondary degree	0.031	0.030	0.040	0.026	0.026	0.039*
Secondary degree	0.801	0.801	0.784	0.803	0.804	0.775*
Tertiary degree	0.168	0.168	0.176	0.171	0.170	0.186
Full-time employed	0.423	0.423	0.433	0.421	0.420	0.431
Unemployed	0.099	0.100	0.091	0.101	0.101	0.102
Other Employment	0.205	0.204	0.252*	0.202	0.201	0.247*
Retired	0.220	0.221	0.191	0.232	0.232	0.186*
Maternity leave	0.020	0.020	0.008*	0.018	0.018	0.007*
In education	0.032	0.032	0.025	0.028	0.028	0.027
Married	0.636	0.637	0.608	0.639	0.639	0.609*
Single	0.230	0.228	0.292*	0.223	0.222	0.280*
Divorced	0.070	0.070	0.059	0.072	0.072	0.071
Widowed	0.064	0.065	0.041*	0.066	0.067	0.040*

Source: SOEP, own calculations.
Notes: Attitude measures (worries) take a value of 1 = not concerned at all, 2 = somewhat concerned, and 3 = very concerned. An individual is assigned to the pre-9/11 group if they were interviewed between January 1, 2001 and September 10, 2001 and to the post-9/11 group if the 2001 interview took place between 12 September and 31 October that year. ∗ Statistically different from pre-9/11 mean at the 5 percent confidence level.

aged 17 or older without a so-called migration background[7] who were interviewed between January 2000 and October 2001, i.e. the 2000 and 2001 SOEP waves. Individuals who took no interview in 2001 or were interviewed on the date of September 11 in 2001 are excluded from the analysis. Moreover, observations with missing information on either of the two main dependent variables are also discarded (1.58 percent of the total sample). This first sample is unbalanced and includes a total of 34,653 observations (16,663 in 2000 and 17,990 in 2001). Next, I consider a second subsample, which additionally includes the two-year period before and after the 9/11

[7]An individual is defined as having a migration background if the person is an immigrant to Germany or is born in Germany to at least one immigrant parents.

terror attacks, i.e. the waves 1999–2004.[8] This second unbalanced sample consists of 70,799 observations.

Descriptive statistics of the two samples are presented in Table 3.1. Each of the samples is again split into two groups – the pre-9/11 (control) group including individuals who were interviewed in 2001 between January 1 and September 10, and the post-9/11 (treatment) group consisting of individuals surveyed between September 12 and October 31 in the year 2001. Individuals in the post-9/11 group are on average younger, report a slightly higher household income, less likely to be on maternal leave or widowed, and more likely to be single than respondents in the control group. Although it is not clear why such differences occur, it is important to control for these characteristics.

4.3.2 Empirical Strategy

The 9/11 terror attacks took place on September 11, 2001. Since we can assume that the whole population has been 'treated' by this event, there is no direct control group which has not received the treatment and whose outcomes could be compared with the outcomes of the treatment group. The whole population is not treated pre-9/11, while post-9/11 the whole population is treated. Yet, exploiting survey interview timing throughout the year 2001 grants the opportunity to identify a causal effect. The exogenous variation in interview dates provides a valid quasi-natural experiment, where outcomes of pre- and post-9/11 interviewees in 2001 can be compared. In order to account for potential differences in unobserved characteristics between the two groups of people who were interviewed before September 11 in 2001 and respondents who where interviewed after the attacks, I additionally use information on each individuals' outcomes in the previous SOEP wave, i.e. in the year 2000.

In other words, I apply a difference-in-difference approach to identify the effects of 9/11 on individual attitudes of German natives toward immigration and xenophobic hostility, comparing attitude levels of pre- and post-9/11 respondents in 2001 and relating them to the same respondents' attitude levels one year prior. The estimation equation is specified as

[8] The period of 1999–2004 is chosen because the two immigration-related attitude measures of interest have been only introduced in the SOEP in 1999. A related attitude measure in previous waves is substantially different in wording and asks more generally about concerns over "the situation of foreigners in Germany".

$$A_{it} = \alpha + \beta_1 Post9/11_{it} + \beta_2 (Year = 2001)_t + \beta_3 [Post9/11_{it} \times (Year = 2001)_t] + u_i + \epsilon_{it},$$

where A_{it} denotes the level of concern over immigration (hostility toward foreigners) of individual i at time t. *Post9/11* is a dummy variable equal to one if the survey interview took place after September 11 in 2001, i.e. in the period from September 12 to October 31 in 2001, and zero otherwise. *Year=2001* is a dummy representing the 2001 survey year, the year of the terror attacks, u_i is an individual fixed effect, and ϵ_{it} is a time-varying random error term.

Parameter β_3 is the difference-in-difference estimator that will represent the causal impact of 9/11 on those interviewed between September 12 and October 31 in 2001 (i.e. the average treatment effect), under the assumption that attitudes of the pre- and post-9/11 group would have changed identically in the absence of the terror events (common trend assumption). If this is assumption holds, the treatment effect can be obtained by difference-in-difference as:

$$\beta_3 = (\Delta \bar{A}_{2001}^{Post9/11} - \Delta \bar{A}_{2000}^{Post9/11}) - (\Delta \bar{A}_{2001}^{Pre9/11} - \Delta \bar{A}_{2000}^{Pre9/11})$$

This parameter is identified through variation in average attitude levels between respondents who were interviewed before and after 9/11 in 2001, and the comparison of this difference with variation in average attitudes between the pre- and post-9/11 group in 2000. β_3 is then estimated by applying either pooled OLS with clustering at the individual level, random-effects or fixed-effects models to the above estimation equation. In the following, I will additionally provide estimates of this approach including an extended time period of two years before and after the terror attacks, i.e. the years 1999-2003, to carefully control for underlying aggregate time trends.

4.4 Results and Discussion

4.4.1 Baseline results

Table 3.2 presents first evidence of a 9/11 impact on individual attitudes toward immigration and concerns over xenophobic hostility in Germany, with estimates using OLS as well as GLS random- and fixed-effects models shown for each de-

Table 3.2: Worries about Immigration (Worries about Xenophobic Hostility) and the 9/11 Attacks – Unbalanced Panel, SOEP 2000 – 2001

	Worries about Immigration			Worries about Hostility		
	OLS	RE	FE	OLS	RE	FE
Post-9/11	-0.073*	-0.082*		0.051	0.042	
	(0.042)	(0.043)		(0.034)	(0.040)	
Year=2001	-0.099***	-0.097***	-0.094***	0.069***	0.071***	0.074***
	(0.006)	(0.005)	(0.005)	(0.006)	(0.006)	(0.006)
Year=2001 × Post-9/11	0.129***	0.141***	0.152***	-0.131***	-0.119***	-0.103**
	(0.043)	(0.041)	(0.042)	(0.045)	(0.044)	(0.045)
Constant	2.102***	2.099***	2.098***	2.146***	2.143***	2.144***
	(0.006)	(0.006)	(0.004)	(0.005)	(0.005)	(0.004)
N	34,653	34,653	34,653	34,653	34,653	34,653

Source: SOEP 2000–2001, own calculations.
Notes: Worries about immigration and worries about xenophobic hostility take a value of 1 = not concerned at all, 2 = somewhat concerned, and 3 = very concerned. Post-9/11 takes a value of 1 for both years (i.e. 2000 and 2001) if the individual was interviewed between January 1, 2001 and September 10, 2001 and 0 between 12 September 2001 and 31 October 2001. Base year = 2000. Standard errors are in parentheses and, in the OLS case, robust to the clustering by individual identification.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

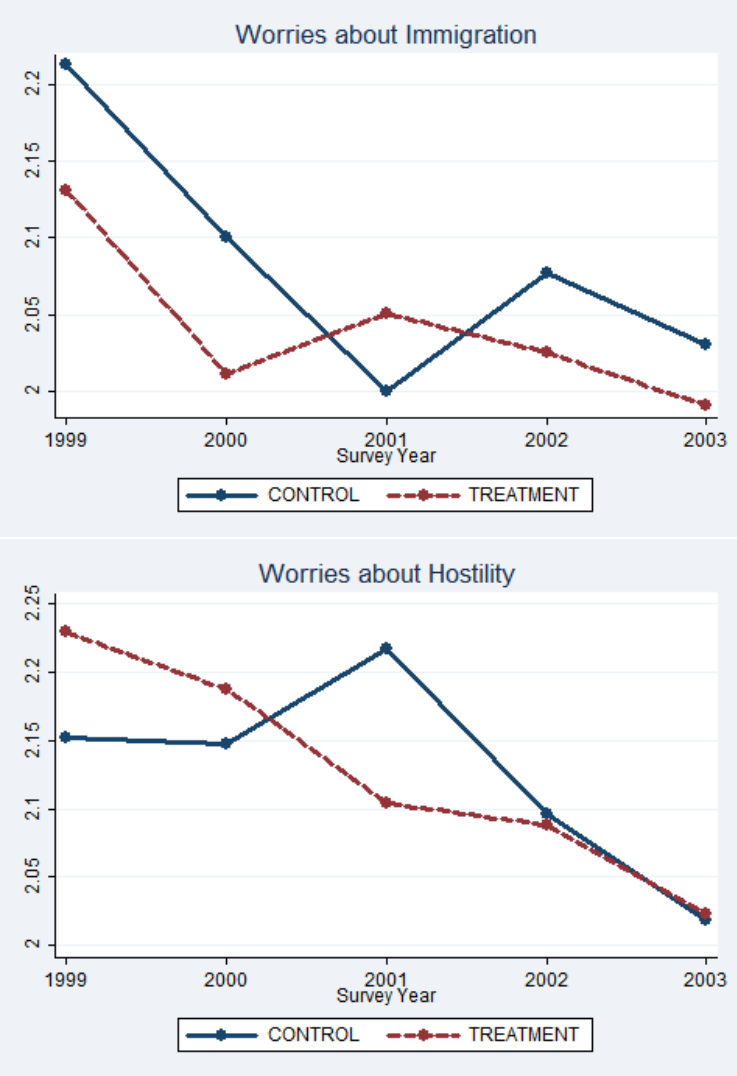
pendent variable.[9] With respect to attitudes toward immigration, the coefficients on the interaction term between *Post9/11* and *Year=2001* are statistically significant and positive across all three models. The point estimates range between 0.129 and 0.152, which is around 38 to 44 percent of one within-individual standard deviation in worries about immigration. This indicates that the post-9/11 treatment group experienced a substantial increase in concerns over immigration, while at the same time respondents in the pre-9/11 control group were even slightly less worried about immigration in 2001 than these same individuals reported in 2000. Interestingly, a similar pattern is observed with respect to people's concerns over hostility toward foreigners or minorities in Germany. Across all three models, the estimated coefficient on the interaction term is significant and negative, with magnitudes ranging from around 29 to 36 percent of one within standard deviation in concerns over xenophobic hostility. This implies that the 9/11 attacks did not only result in increased worries about immigration, but also a decrease in worries about xenophobic hostility in Germany. The significant and positive coefficient on *Year=2001* indicates that the control group of pre-9/11 respondents instead experienced a moderate increase in such concerns from 2000 to 2001.

[9]Random effect ordered probit estimations yield qualitatively similar results and are available upon request.

This first set of results demonstrate the immediate negative effects of the 9/11 terror attacks in the US on public attitudes in a European country. However, an important assumption is that the attitudes of both the treatment and control group would have followed a similar path in the absence of the treatment. One means of checking this is to consider whether both groups' attitude levels followed a similar trend in the years preceding 2001 and the years after the event. Figure 3.1 shows that the average levels of individuals' worries about immigration and concern over xenophobic hostility follow a very similar trend for both pre- and post-9/11 groups in the two-year periods before and after 2001. However, in the year of the attacks the trend diverges for the two groups, with a noticeable increase in worries about immigration and a considerable decrease in concerns over xenophobic hostility for those interviewed post-9/11 from 2000 to 2001. This is consistent with the estimated treatment effects presented in Table 3.2.

In a next step, I incorporate the two years before and after the attacks (survey years 1999-2003) in the empirical analysis, to control more carefully for underlying time trends. In this second set of estimations, controls for gender, age, age squared and log household income, as well as dummies for marital status, labor force status, education, federal state and interview month are added. The results of the GLS models with random and fixed effects respectively are presented in Table 3.3. With this full specification, the estimated coefficients on the interactions of interest (*Post9/11* $\times$ *Year=2001*) remain positive and statistically significant in the case of worries about immigration and significantly negative with respect to concerns about xenophobic hostility. In contrast, coefficients on the interaction terms between the post-9/11 treatment group and indicators for the years prior to or post-2001 appear not to be significantly different from zero. This supports the view that, controlling for the relevant covariates, the attitudes of the treatment group do not systematically differ from those of the pre-9/11 control group for reasons other than the exogenous and unanticipated 9/11 terror shock. Note again that in the years prior to 2001 both groups are untreated, while both are treated in the years after 2001. We thus only expect both groups to differ in the year 2001 due to interview timings pre- or post-9/11, which appears to be confirmed by the estimation results in Table 3.3. Overall, the findings fit the evidence on international spillovers based on aggregated time trends.

Figure 3.1: Trends in Worries about Immigration (Worries about Xenophobic Hostility) Before and After the 9/11 Attacks, SOEP 1999 – 2003



Source: SOEP 1999–2003, own calculations.
Note: 2001 is the year of the 9/11 attacks. Unconditional annual means by group. Treatment group: individuals surveyed post-9/11 in 2001. Control group: individuals surveyed pre-9/11 in 2001.

Table 3.3: Worries about Immigration (Worries about Xenophobic Hostility) and the 9/11 Attacks – Multiple time periods, SOEP 1999 – 2003

	Worries about Immigration		Worries about Hostility	
	RE	FE	RE	FE
Post-9/11	-0.033		0.044	
	(0.076)		(0.075)	
Year=2000	-0.087***	-0.080***	-0.012*	-0.001
	(0.007)	(0.012)	(0.007)	(0.012)
Year=2001	-0.190***	-0.182***	0.077***	0.098***
	(0.007)	(0.020)	(0.007)	(0.020)
Year=2002	-0.148***	-0.112***	-0.039***	-0.011
	(0.008)	(0.029)	(0.008)	(0.030)
Year=2003	-0.195***	-0.158***	-0.115***	-0.079**
	(0.008)	(0.038)	(0.008)	(0.039)
Year=2000 × Post-9/11	-0.034	-0.047	-0.032	0.002
	(0.077)	(0.080)	(0.078)	(0.082)
Year=2001 × Post-9/11	0.170**	0.171**	-0.308***	-0.259***
	(0.079)	(0.081)	(0.080)	(0.083)
Year=2002 × Post-9/11	-0.002	-0.007	-0.082	-0.056
	(0.078)	(0.081)	(0.079)	(0.083)
Year=2003 × Post-9/11	-0.002	-0.005	-0.076	-0.061
	(0.079)	(0.081)	(0.080)	(0.083)
Male	0.029***		-0.107***	
	(0.009)		(0.008)	
Age	0.005***		0.009***	
	(0.002)		(0.001)	
Age-squared/100	-0.003*		-0.011***	
	(0.002)		(0.001)	
Secondary degree	0.027	0.013	-0.025	0.009
	(0.020)	(0.029)	(0.019)	(0.030)
Tertiary degree	-0.298***	0.018	0.038*	-0.042
	(0.023)	(0.041)	(0.022)	(0.042)
Unemployed	-0.016	-0.004	-0.030***	-0.016
	(0.010)	(0.013)	(0.010)	(0.013)
Other employment	-0.038***	-0.015	0.010	0.000
	(0.009)	(0.011)	(0.008)	(0.011)
Retired	-0.015	-0.042**	-0.002	0.003
	(0.013)	(0.019)	(0.013)	(0.019)
Maternity leave	-0.015	0.006	0.018	0.002
	(0.019)	(0.022)	(0.019)	(0.022)
In education	-0.119***	-0.037*	-0.013	-0.062***
	(0.018)	(0.021)	(0.018)	(0.022)
Single	-0.100***	-0.047*	-0.030**	0.013
	(0.013)	(0.025)	(0.012)	(0.026)
Divorced	-0.023	0.017	-0.037***	-0.027
	(0.014)	(0.024)	(0.013)	(0.025)
Widowed	-0.088***	-0.086**	-0.060***	-0.004
	(0.018)	(0.039)	(0.016)	(0.040)
Ln(net household income)	-0.047***	-0.012	0.006	0.002
	(0.007)	(0.010)	(0.007)	(0.010)
Constant	2.504***	2.817***	2.156***	2.501***
	(0.081)	(0.353)	(0.076)	(0.362)
N	70,799	70,799	70,799	70,799

Source: SOEP 1999–2003, own calculations.
Notes: See Table 3.2. Control variables additionally include federal state and interview month dummies. Reference groups include female, married, lower than secondary degree, and full-time employment. Fixed effects models include age dummies rather than continuous age variables.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Robustness

Was the shift toward more negative immigration-related attitudes following the 9/11 terror attacks accompanied by shifts in fear of job loss or more general types of macro attitudes? Of special interest here are people's concerns over job security, over general economic development and worries about crime in Germany. Accordingly, Table 3.4 explores the possibility that the 9/11 attacks also had an impact on these attitudes. Rerunning random and fixed effects models in the specification of Table 3.3 with measures of worries about job security, economic development and crime in Germany as dependent variables suggests no significant impact of 9/11 on these concerns. For all models in Table 3.4, the coefficient on the interaction of interest (*Post9/11* × *Year=2001*) is statistically insignificantly different from zero. This suggests that the effects shown in Section 4.4.1 are not a result of an increased public awareness of security issues or changes in other economic concerns related to immigration. Instead, it is consistent with the interpretation of 9/11 representing a non-economic shock.

4.4.2 Effect Heterogeneity and the Role of Education

Having established empirical evidence that the 9/11 terror events had significant negative effects on individual attitudes toward immigration and resulted in a decrease in worries about xenophobic hostility in Germany, I now investigate whether different types of individuals have been more or less responsive to the 9/11 shock. Along with possible differential effects on individuals according to their education levels, I also examine effect heterogeneity with respect to demographic characteristics such as gender and age, as well as regional foreigner concentration. Tables 3.5 and 3.6 recalculate the random effects estimations from Table 3.3 for split samples by gender, age (i.e. below and above the age of 35), below and above average years of education (i.e. below and above 12 years of education) and federal states with below and above average shares of foreigners, respectively, for both main dependent variables.

As indicated by the first set of results in Table 3.5, men may have been slightly, however not statistically significantly, more responsive than women to the 9/11 attacks in terms of worries about immigration. Similarly, younger individuals appear to have reacted more strongly than older people, but these differences are also not very substantial. Furthermore, when comparing respondents in federal states with a relatively low share of foreigners with those in states with a relatively higher share

Table 3.4: Robustness Check: Other Worries and the 9/11 Attacks – Multiple time periods, SOEP 1999 – 2003

	Worries about Economic Development		Worries about Crime in Germany		Worries about Job Security	
	RE	FE	RE	FE	RE	FE
Post-9/11	0.009		-0.025		-0.065	
	(0.068)		(0.068)		(0.092)	
Year=2000	-0.070***	-0.063***	-0.021***	-0.018*	-0.020**	-0.027*
	(0.007)	(0.010)	(0.006)	(0.010)	(0.009)	(0.015)
Year=2001	-0.099***	-0.091***	-0.063***	-0.058***	-0.093***	-0.108***
	(0.006)	(0.017)	(0.006)	(0.017)	(0.009)	(0.025)
Year=2002	0.093***	0.132***	-0.110***	-0.080***	-0.074***	-0.046
	(0.007)	(0.025)	(0.007)	(0.024)	(0.010)	(0.036)
Year=2003	0.359***	0.402***	-0.170***	-0.138***	-0.004	0.016
	(0.008)	(0.033)	(0.007)	(0.032)	(0.011)	(0.047)
Year=2000 × Post-9/11	-0.103	-0.100	0.008	-0.010	0.056	0.053
	(0.072)	(0.076)	(0.070)	(0.073)	(0.095)	(0.100)
Year=2001 × Post-9/11	0.092	0.104	0.014	0.010	0.039	0.013
	(0.073)	(0.078)	(0.071)	(0.075)	(0.096)	(0.101)
Year=2002 × Post-9/11	-0.009	-0.015	-0.001	-0.025	0.128	0.112
	(0.073)	(0.077)	(0.071)	(0.074)	(0.096)	(0.101)
Year=2003 × Post-9/11	0.026	0.027	0.031	0.009	0.124	0.115
	(0.074)	(0.078)	(0.072)	(0.074)	(0.098)	(0.102)
Constant	2.132***	2.079***	2.577***	2.501***	2.191***	1.979***
	(0.067)	(0.251)	(0.070)	(0.241)	(0.107)	(0.297)
N	70,693	70,693	70,703	70,703	41,024	41,024

Source: SOEP 1999–2003, own calculations.
Notes: See Table 3.2. Control variables as in Table 3.3. Fixed effects models include age dummies rather than continuous age variables. Models of concerns job security include only employed individuals.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

of foreigners, there appear to be no significantly different reactions to the 9/11 events in terms of attitudes toward immigration. The latter finding is particularly interesting in the light of empirical evidence from previous studies employing cross-sectional analysis in the German context . For example, Fertig and Schmidt (2001) find that a lower regional foreigner concentration is associated with less favorable immigration-related attitudes among natives on average. However, in response to 9/11, individuals do not seem to update their attitudes toward immigration differently according to whether they reside in a region with a low- or high share of foreigners.

The previous background discussion suggests that education may moderate 9/11 effects. Indeed, the estimation results by education level show that the attacks had a larger impact on the group of relatively lower educated individuals than the highly educated. Moreover, the difference is substantial and statistically significant.[10] Within the subsample of highly educated individuals, the estimated coefficient on the interaction *Post9/11* × *Year=2001* is small in size and not significantly different from zero. Hence, the group of highly educated does not appear to have updated their attitudes toward immigration in the light of the 9/11 events.

The second set of results in Table 3.6 deals with effect heterogeneity with respect to individual concerns over xenophobic hostility. Interestingly, the estimated coefficients on the interaction *Post9/11* × *Year=2001* are very similar to each other throughout the split samples, and the differences between males and females, young and old, residents in regions with low and high share of foreigners, and also between the low and the high-educated group are not statistically significant. Consequently, the 9/11 attacks appear to have uniformly lowered individuals' worries about xenophobic hostility across the population subgroups analyzed. In particular, there is no evidence of a moderating role of education, with both the highly and lower educated reacting equally strongly to the attacks by being less concerned about xenophobic tendencies in the German society. This result is especially striking considering the previous finding of a moderating effect with respect to peoples' attitudes toward immigration.

However, the ambiguous nature of the measure of individuals' concerns over xenophobic hostility does not allow for a straightforward interpretation of the latter

[10] I additionally estimated specifications introducing interaction effects instead of split samples by education level. Results are presented in Table B1 in Appendix B for both dependent variables. Similar estimations including interactions with respect to age, gender and regional foreigner share yield non-significant coefficients on the respective interaction terms. These results are available upon request.

Table 3.5: Worries about Immigration. Effect Heterogeneity by Gender, Age, Regional Foreigner Share and Education

	Worries about Immigration							
	Male	Female	Age<=35	Age>35	Low F Share	High F Share	Low Edu	High Edu
Post-9/11	-0.041	-0.024	-0.123	0.035	-0.007	-0.051	-0.064	-0.020
	(0.104)	(0.110)	(0.125)	(0.096)	(0.120)	(0.097)	(0.110)	(0.105)
Year=2000	-0.086***	-0.088***	-0.062***	-0.098***	-0.093***	-0.085***	-0.084***	-0.088***
	(0.010)	(0.010)	(0.013)	(0.008)	(0.010)	(0.010)	(0.009)	(0.012)
Year=2001	-0.185***	-0.196***	-0.163***	-0.201***	-0.184***	-0.199***	-0.183***	-0.192***
	(0.009)	(0.010)	(0.013)	(0.008)	(0.010)	(0.010)	(0.009)	(0.011)
Year=2002	-0.145***	-0.152***	-0.140***	-0.161***	-0.129***	-0.167***	-0.127***	-0.170***
	(0.011)	(0.012)	(0.015)	(0.010)	(0.012)	(0.011)	(0.011)	(0.013)
Year=2003	-0.200***	-0.190***	-0.179***	-0.211***	-0.196***	-0.197***	-0.183***	-0.200***
	(0.011)	(0.012)	(0.016)	(0.010)	(0.012)	(0.011)	(0.011)	(0.013)
Year=2000 × Post-9/11	-0.057	-0.012	0.037	-0.095	-0.089	0.008	0.013	-0.061
	(0.106)	(0.112)	(0.129)	(0.098)	(0.123)	(0.099)	(0.114)	(0.105)
Year=2001 × Post-9/11	0.189*	0.149	0.239*	0.100	0.170	0.191*	0.243**	0.062
	(0.108)	(0.114)	(0.134)	(0.100)	(0.127)	(0.101)	(0.116)	(0.107)
Year=2002 × Post-9/11	0.078	-0.083	-0.011	-0.037	-0.023	0.016	0.017	0.007
	(0.108)	(0.113)	(0.136)	(0.099)	(0.124)	(0.101)	(0.115)	(0.107)
Year=2003 × Post-9/11	-0.029	0.017	-0.047	-0.036	-0.029	0.024	0.072	-0.083
	(0.109)	(0.114)	(0.141)	(0.099)	(0.123)	(0.103)	(0.116)	(0.107)
Constant	2.507***	2.561***	2.497***	2.387***	2.201***	2.502***	2.661***	2.763***
	(0.109)	(0.121)	(0.221)	(0.124)	(0.116)	(0.105)	(0.102)	(0.123)
N	36,941	33,858	19,504	51,295	32,769	38,030	44,502	26,297

Source: SOEP 1999–2003, own calculations.
Notes: See Table 3.2. Random effects models. Control variables as in Table 3.3. High Edu is defined as individual with 12 or more years of education/training. High F Share indicates a foreigner share at federal state level above the national level share of foreign nationals in Germany in 2000.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 3.6: Worries about Xenophobic Hostility. Effect Heterogeneity by Gender, Age, Regional Foreigner Share and Education

	Worries about Hostility							
	Male	Female	Age<=35	Age>35	Low F Share	High F Share	Low Edu	High Edu
Post-9/11	0.001	0.089	0.015	0.072	0.135	-0.031	0.063	0.066
	(0.102)	(0.110)	(0.121)	(0.097)	(0.119)	(0.097)	(0.111)	(0.101)
Year=2000	-0.009	-0.017	0.001	-0.017**	-0.011	-0.018*	-0.027***	0.015
	(0.010)	(0.010)	(0.013)	(0.009)	(0.010)	(0.010)	(0.009)	(0.012)
Year=2001	0.087***	0.066***	0.097***	0.071***	0.077***	0.072***	0.058***	0.110***
	(0.009)	(0.010)	(0.013)	(0.008)	(0.010)	(0.010)	(0.009)	(0.011)
Year=2002	-0.036***	-0.042***	-0.052***	-0.035***	-0.017	-0.064***	-0.034***	-0.051***
	(0.011)	(0.012)	(0.015)	(0.010)	(0.012)	(0.011)	(0.011)	(0.013)
Year=2003	-0.109***	-0.120***	-0.144***	-0.106***	-0.100***	-0.134***	-0.101***	-0.142***
	(0.011)	(0.012)	(0.016)	(0.010)	(0.012)	(0.012)	(0.011)	(0.013)
Year=2000 × Post-9/11	0.014	-0.084	-0.044	-0.037	-0.167	0.070	-0.107	0.009
	(0.107)	(0.115)	(0.128)	(0.100)	(0.123)	(0.101)	(0.116)	(0.105)
Year=2001 × Post-9/11	-0.280**	-0.342***	-0.343***	-0.320***	-0.381***	-0.232**	-0.308***	-0.352***
	(0.109)	(0.116)	(0.132)	(0.102)	(0.128)	(0.103)	(0.118)	(0.108)
Year=2002 × Post-9/11	-0.007	-0.158	-0.048	-0.114	-0.172	-0.014	-0.148	-0.046
	(0.109)	(0.116)	(0.135)	(0.101)	(0.124)	(0.104)	(0.117)	(0.108)
Year=2003 × Post-9/11	-0.001	-0.152	-0.165	-0.071	-0.135	-0.041	-0.073	-0.136
	(0.110)	(0.116)	(0.140)	(0.101)	(0.124)	(0.106)	(0.118)	(0.108)
Constant	2.163***	2.009***	1.908***	2.075***	1.577***	2.328***	2.103***	2.250***
	(0.102)	(0.114)	(0.206)	(0.116)	(0.110)	(0.098)	(0.098)	(0.111)
N	36,941	33,858	19,504	51,295	32,769	38,030	44,502	26,297

Source: SOEP 1999–2003, own calculations.
Notes: See Table 3.2. Random effects models. Control variables as in Table 3.3. High Edu is defined as individual with 12 or more years of education/training. High F Share indicates a foreigner share at federal state level which is above the national level share of foreign nationals in Germany in the year 2000.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

results, as the survey question might in fact trigger diverse connotations. For instance, while one person might report weak concerns over xenophobic hostility due to a distaste for foreigners in Germany or a lack of empathy with them, another individual may report weak concerns due to their belief that there are no xenophobic tendencies immanent in the German society. The former would therefore reflect an opinion toward minorities or immigrants, while the latter would rather represent an opinion toward fellow German residents. Unfortunately, the different associations related to the survey question are not observable to the researcher, and might even differ according to the respondent's educational level. The result of lower concerns over xenophobic hostility in response to the 9/11 events could thus either be interpreted as a shift to more negative attitudes toward immigrants and minorities, or alternatively might indicate a shift to more positive attitudes toward fellow German natives. While it is not possible to clearly distinguish between these two interpretations within this study, it is certainly not intuitive to think of a large-scale terror attack as to having resulted in expectations of decreasing xenophobic tendencies in Germany, especially given the German history of xenophobic incidents and violent acts against foreigners (see e.g. Krueger and Pischke, 1997). Against this background, the finding of low- and high-educated respondents reacting equally strongly to the 9/11 events with lower worries about xenophobic hostility casts some doubt on the moderating role of education in this context.

The results presented here might rather point at distorting effects due to real or perceived social desirability response bias, which is both higher for the better educated and more prevalent in the more obtrusive question on concerns over immigration. Studying such distorting effects on expressions of immigration attitudes in survey interviews, e.g. Janus (2010) finds that college graduates are more likely than respondents with a lower educational level to conceal anti-immigration views when asked directly. Stocké (2007) shows that better educated respondents of the German General Social Survey (ALLBUS) perceive stronger social desirability incentives when answering racial attitude questions than the less educated. If the survey question on xenophobic hostility is perceived as less obtrusive, especially due to its ambiguous connotation, then its responses may be more in line with individuals' "true" attitudes. In turn, this would suggest that the finding of a moderating role of education with respect to attitudes toward immigration is solely an artifact of self-presentational concerns. However, I cannot observe respondents' sensitivity to social desirability pressures within this setting, and thus the above interpretation efforts must remain of a speculative nature.

4.5 Summary and Conclusion

This study highlights that the 9/11 terror attacks in the US had a significant and negative impact on individual attitudes toward immigration and immigrants among native German residents. More specifically, it is shown that the attacks increased worries about immigration by around 38 to 44 percent of one within-individual standard deviation, and lowered concerns over xenophobic hostility by approximately 29 to 36 percent of one within standard deviation. These effects are significant and robust.

Moreover, this analysis provides evidence for the role of educational attainment in moderating individuals' attitudinal responses to a major event such as 9/11. In fact, highly educated respondents have not shown any significant change in attitudes toward immigration in the aftermath of the attacks, whereas the lower educated reacted with a considerable and significant shift to more negative immigration attitudes. However, evidence with respect to individual concerns over xenophobic hostility show a different pattern, with both low- and high-educated individuals reacting equally strongly to the 9/11 attacks by lowering their concerns over xenophobic hostility in Germany. Despite the ambiguous character of the measure of attitudes toward xenophobic tendencies, this finding may cast some doubt on a universal moderating role of education.

Overall, this study provides the first causal evidence that the 9/11 terror attacks in the US provoked substantial changes toward more negative immigration-related attitudes within the wider German society. It shows that external non-economic shocks and other major media events may have the potential to trigger voters' cultural prejudices and frame the public debate. Mixed evidence on the moderating role of education points to the important future research agenda of examining the mechanisms behind the potential effect of education on anti-immigration and anti-foreigner sentiments. Another step for further study in this context would be to probe the influence of social desirability pressures among the highly educated.

Appendix B

Table B1: Three-Way Interaction – 9/11 Effects and the Moderating Role of Education

	Worries about Immigration	Worries about Hostility
Year=2000	-0.066***	-0.033***
	(0.009)	(0.009)
Year=2001	-0.167***	0.052***
	(0.009)	(0.009)
Year=2002	-0.115***	-0.043***
	(0.010)	(0.010)
Year=2003	-0.173***	-0.110***
	(0.010)	(0.010)
High-Edu	-0.185***	0.051***
	(0.013)	(0.013)
Year=2000 × High-Edu	-0.028*	0.047***
	(0.015)	(0.015)
Year=2001 × High-Edu	-0.029**	0.058***
	(0.015)	(0.015)
Year=2002 × High-Edu	-0.062***	-0.003
	(0.015)	(0.015)
Year=2003 × High-Edu	-0.031**	-0.028*
	(0.015)	(0.015)
Post-9/11 × High-Edu	0.011	0.030
	(0.149)	(0.148)
Post-9/11	-0.056	0.033
	(0.106)	(0.105)
Year=2000 × Post-9/11	0.026	-0.079
	(0.110)	(0.111)
Year=2001 × Post-9/11	0.306***	-0.288***
	(0.110)	(0.111)
Year=2002 × Post-9/11	0.022	-0.115
	(0.110)	(0.112)
Year=2003 × Post-9/11	0.078	-0.044
	(0.111)	(0.113)
Year=2000 × Post-9/11 × High-Edu	-0.094	0.093
	(0.156)	(0.157)
Year=2001 × Post-9/11 × High-Edu	-0.278*	-0.056
	(0.154)	(0.156)
Year=2002 × Post-9/11 × High-Edu	-0.010	0.075
	(0.158)	(0.160)
Year=2003 × Post-9/11 × High-Edu	-0.148	-0.083
	(0.159)	(0.161)
N	70,799	70,799

Source: SOEP 1999–2003, own calculations.
Notes: See Table 3.2. Random effects models. Control variables as in Table 3.3. High-Edu is defined as individual with 12 or more years of education/training. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Chapter 5

Concluding Remarks

Main Findings and Policy Implications

The successful integration of immigrants and their children in host-country labor markets is one of the most important and challenging issues, faced not only by the German society, but also by other Western economies with large and growing immigrant populations. The scope for integration is particularly high for second-generation migrants, given that this group holds a key position with respect to the future economic progression of immigrant groups. Growing up in the host country and attending its educational system, second-generation migrants presumably have a far greater capacity for integration than their parents. This, in turn, implies that it is of crucial importance to assess potential obstacles to migrant youths' integration already at early ages. This thesis contributes to the ongoing debate about the determinants of long-term immigrant integration by analyzing several potential barriers, with a particular focus on issues related to educational attainment. Chapters 2 and 3 focus on barriers faced by second-generation migrants in the host country education system. Chapter 4 assesses barriers to integration from the side of the native population by investigating determinants of anti-immigrant attitudes within the host society and the role of education therein. The empirical studies are based on data from the German Socio-Economic Panel Study (SOEP). The main empirical approaches employed in this work rely on sibling fixed effects, matching and difference-in-difference estimators.

A lack of cultural integration is often blamed for hindering immigrant families' economic progression. In Chapter 2, I estimate the impact of immigrant parents' self-identification with the German society and affiliation to their respective home

country culture on the probability of a child being placed into one of the higher secondary schooling tracks in Germany. This study contributes to a growing literature concerned with the economics of ethnic identity by introducing a novel intergenerational perspective to a strand of research that has been largely concerned with first-generation outcomes to date. The empirical study uses the longitudinal data from the SOEP to match child outcomes with parental measures of ethnic identity. Potential simultaneity bias issues are addressed by employing measures of parental identity observed at least one year prior to secondary schooling placement decisions. Unobserved, family-specific time-invariant factors are carefully controlled for by additionally estimating models that exploit within-family variation across siblings.

The main results presented in Chapter 2 indeed indicate a systematic intergenerational association between parental ethnic identity and child education. The contribution of parental identity measures in explaining secondary schooling placement of second-generation migrants is found to be substantial, even when controlling for differences across ethnic groups, family background, duration of stay and exploiting within-family variation. Interestingly, the results indicate a positive and significant role of both parental German identity and minority identity. Hence, there is no indication of a detrimental impact when immigrant parents preserve their original culture. Neither do these results suggest that the effects of a strong parental minority identity are solely the flipside of a weak parental German identity. Rather, these findings support the view that both parental identities matter independently and that both are potentially beneficial for the scholarly career of second-generation migrants. Moreover, I find differential parental roles with positive impacts of German identity working through mothers and beneficial minority-identity effects being specific to fathers. Additional evidence indicates that the positive maternal effect might not be an effect of ethnic affiliation per se, yet is closely related to mothers' German language proficiency. This pattern is consistent with the importance of mothers as active managers of their children's school career. In the context of *immigrant* mothers, this role includes in particular practical host-country related knowledge. On the other hand, the paternal effect, does not appear to be related to language skills. Immigrant fathers' sense of ethnic group affiliation might thus work through less 'practical' mechanisms (for example, a stronger self-esteem, as suggested by cross-cultural psychology literature), that serve as a stabilizing element in positively contributing to the child's academic performance.

The main results reported in Chapter 2 generally underline the importance of modeling ethnic identity in a two-dimensional framework and considering measures

of both maternal and paternal ethnic identities as independent factors. Overall, the results point at integrated rather than separated or assimilated family environments being most conductive for the educational success of the second generation. Hence, policy initiatives aiming at facilitating immigrant families' long-term economic progression in the host country should focus less on strategies that lead to immigrants abandoning their cultural heritage. Adequate policy measures should rather concentrate on incentivizing immigrant mothers to accumulate host-country specific human capital and increase their knowledge of the host-country education system, thus helping them to increase their efficiency in managing their children's scholarly career.

While Chapter 2 focuses on the variation in educational outcomes *within* the group of second-generation migrants, Chapter 3 contributes to a large and growing economic literature concerned with explaining disparities in education outcomes between native and migrant children. Can such disparities be fully explained by compositional differences in the socio-economic family background between these groups, or can migrant-specific and other factors play a role? The results primarily show that second-generation migrants indeed significantly differ from their native peers in terms of household characteristics and parental background. This underlines the importance of accounting for such compositional differences when comparing educational outcomes across the two groups of migrant and native children. In fact, by employing linear and matching decomposition methods, we find such compositional differences in socioeconomic background to be entirely responsible for differences in recommendations given by teachers and enrollment rates at different secondary school types. Also the native-migrant gap in educational attainment at age 17 can be fully attributed to differences in socioeconomic background. These results are robust whether employing the linear decomposition method or techniques based on propensity score matching. They also hold when additionally conditioning on a measure of cognitive ability or separately considering the higher and lower part of the family-income distribution.

Therefore, these findings suggest that if migrant and native children shared the same socioeconomic background, they would be equally likely to receive recommendations or enroll at any secondary school type. In other words, comparable natives in terms of family background face similar difficulties and show similar education outcomes as migrant children at all the examined stages in the German education system. These results are broadly in line with the previous literature in the German context, which focuses on outcomes at the end of primary school. We extend these

findings by showing that these results are robust to methodological variations and hold with respect to actual enrollment rates, and also track attendance throughout secondary education. Overall, the main results of this chapter leave little room for migrant-specific or other factors in determining the native-migrant gap and rather point at more general inequalities in secondary schooling in Germany which are not migrant-specific. Therefore, adequate policy measures should generally focus on families with a low socio-economic status to reduce children's disadvantages already before entering secondary schooling.

The preceding analyses are complemented in Chapter 4 by a study concerned with the importance of 'non-economic' determinants of anti-immigrant and anti-immigration attitudes among the native host-country population. In particular, this study investigates whether and to what extent immigration-related opinions are affected by a major external non-economic shock, namely the 9/11 terror attacks of 2001. The main contributions of this chapter are to carefully abstract from economic factors in a quasi-experimental setting, and also to overcome potential omitted variable bias by exploiting intra-individual variation in attitudes over time. Importantly, exploiting that survey interviews in the SOEP were randomly conducted throughout the year - before and after 9/11, allows identifying the immediate negative impact on individual attitudes toward immigration as well as concerns over xenophobic hostility. Moreover, the panel structure of the data allows for investigating individual's attitudinal changes over several years before and after 2001, thus controlling for aggregate trends. Additionally, this quasi-experimental setting allows for exploring the potential role of education in moderating the negative terrorism shock.

The key results of Chapter 4 provide the first causal evidence that the 9/11 terror attacks in the US provoked substantial changes toward more negative immigration-related attitudes beyond US borders, namely within the wider German society. In response to the attacks, worries about immigration significantly increased by around 38 to 44 percent of one within-individual standard deviation, and concerns over xenophobic hostility decreased by approximately 29 to 36 percent of one within standard deviation. These effects are significant and robust. Moreover, I find no evidence of the 9/11 events causing similar changes in individuals' worries concerning overall economic development or crime in Germany, which confirms the non-economic nature of the 9/11 shock on immigration-related attitudes. These results indicate that negative views on migration issues are not exclusively based on economic rationales and confirm the importance of 'non-economic' factors such as racial or cultural concerns, as suggested by previous literature based on cross-sectional evidence. Accordingly,

policy measures directed towards encouraging immigration and immigrant integration into host country labor markets should take into account that public opinion on migration issues can be affected, even in absence of economic threat. Indeed, external shocks, major media events or manipulative campaigns by certain interest groups may have the potential to trigger voters' cultural prejudices and frame the public discourse.

Furthermore, the results reported in Chapter 4 provide exploratory evidence on the potentially moderating role of education in individuals' responsiveness to the 9/11 shock. Does education shelter from cultural threat? Indeed, in terms of attitudes toward immigration, the response of the highly-educated has been negligible and the estimated mean effect appears to be mainly driven by a significant shift toward more negative immigration attitudes within the group of lower educated individuals. These results are consistent with a moderating role of education in response to a major non-economic shock. However, there is no evidence of such a moderating effect with respect to concerns over xenophobic hostility. Both low- and high-educated react equally strongly to the 9/11 attacks by lowering their concerns over hostility toward foreigners in Germany. The latter finding may cast some doubt on a universal moderating role of education. These seemingly contradictory findings might as well be a result of distorting effects owing to social desirability response bias, which is both higher for the better educated and at the same time more prevalent in the more obtrusive question on concerns over immigration. Consequently, this would suggest that a moderating role of education is solely an artifact. In the research framework of this study, the empirical evidence on a potential moderating role of education must remain inconclusive. However, these results point to the important future research agenda of examining the mechanisms behind the potential effect of education on anti-immigration and anti-foreigner sentiments.

Future Research

The studies presented in this thesis represent part of a large and ever-growing literature of empirical research on immigrant integration from a long-term perspective. They particularly address issues related to ethnic identity, second-generation migrants and native attitudes toward migrants and immigration. In a broader sense, the underlying global question is: What are true barriers to long-term integration and what, in turn, determines immigrant families' success in the host country economy? Despite this work addressing at least some aspects of this very fundamental

question, there remain a number of avenues for future research in this direction.

Chapter 2 contributes to an emerging literature on the economics of ethnic identity. To date, most empirical work in economics has focused on foreign-born immigrants, although some research has begun to analyze the native-born second generation. The analysis in Chapter 2 additionally proposes an intergenerational perspective, providing important insights into mechanisms through which ethnic identity may affect intergenerational economic progress. However, immigrant generations turn out to be quite complex and thus further research is required in this context. For example, the findings presented above indicate different roles of immigrant fathers and mothers. While this aspect has also been raised in the literature dealing with intermarried parental couples, little is known about the underlying mechanisms and whether there are further gender differences with respect to immigrant sons and daughters.

From a theoretical perspective, reverse causality is a potential issue when studying ethnic identity effects on the next generation. Although the empirical analysis presented in Chapter 2 can partly address this issue, further research is needed in this respect. Ideally, future research would exploit sources of exogenous variation in immigrant ethnic identity to more thoroughly determine how and why parental ethnic identity affects intergenerational economic progress.

Chapters 2 and 3 focus on variation in outcomes *within* the group of second-generation migrants and disparities *between native and migrant* children, respectively. A third approach would be to examine variation *across ethnic groups*, investigating the factors that lead to some groups performing better than others with respect to intergenerational progress and second-generation education outcomes. For example, the results presented in Chapter 2 indicate that among second-generation migrants in Germany, children of Greek origin perform particularly well. Sociological research has suggested that the Greek academic success may be attributed to the availability of alternative Greek-language schools in Germany, although such empirical evidence is presently lacking. Both from a research and policy perspective, it would be interesting to analyze these effects in a systematic empirical framework.

The results reported in Chapter 4 support the view that individuals respond to an exogenous shock by updating their immigration-related attitudes, at least in the short run. One natural step to complement this study would be to investigate not only whether the non-economic shock of 9/11 affected individual attitudes, but also whether it had an impact on people's actual behavior, that is, for instance their voting behavior. Although attitudinal reactions to major media shocks might

quickly dissipate, a change in voting behavior has long-term consequences.

Another interesting avenue for future research relates to the potential effect of education on anti-immigration and anti-foreigner sentiments. The results in Chapter 4 provide some exploratory evidence for a potential moderating role of education in response to the negative 9/11 shock, but at the same time, these findings might have been generated by social desirability pressures. Therefore, it remains an open question whether education exerts per se a liberizing effect resulting in less ethnic prejudice and a greater appreciation of cultural diversity. Future research may be able to shed more light on this empirically relatively unexplored issue.

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Chapter 4

- "The Effects of 9/11 on Attitudes toward Immigration and the Moderating Role of Education", IZA Discussion Paper No. 7052, 2012.
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English Summary (Abstracts)

Chapter 2: Parental Ethnic Identity and Educational Attainment of Second-Generation Immigrants

A lack of cultural integration is often blamed for hindering immigrant families' economic progression. This chapter explores whether there are in fact long-term economic or social consequences by investigating on intergenerational effects of parental ethnic identity on the next generation's human capital accumulation. Empirical results based on data from the German Socio-Economic Panel indicate a positive role of both parental majority as well as minority identity – even controlling for differences in ethnicity, family background, years since migration and exploiting within-family variation. I find differential parental roles with positive impacts of majority identity working through mothers and beneficial minority identity effects being specific to fathers. Additional tests show that the effect of maternal majority identity is closely related to mothers' German language proficiency. Overall, the results point at integrated, rather than separated or assimilated family environments to be most conductive for educational success of the second generation.

Chapter 3: Decomposing the Native-Migrant Education Gap

This chapter investigates second generation migrants and native children at several stages in the German education system to analyze the determinants of the persistent native-migrant gap. One part of the gap can be attributed to differences in socioeconomic background and another part remains unexplained. Faced with this decomposition problem, linear and matching decomposition methods are applied. Accounting for differences in socioeconomic background, the results show that migrant pupils are as likely to receive recommendations for or to enroll at any secondary school type as native children. Comparable natives, in terms of family background, thus face similar difficulties as migrant children. These results point at more general inequalities in secondary schooling in Germany which are not migrant-specific.

Chapter 4: The Effects of 9/11 on Attitudes Toward Immigration and the Moderating Role of Education

The major event of the 9/11 terror attacks is likely to have induced an increase in anti-immigrant and anti-foreigner sentiments, not only among US residents but also beyond US borders. Using longitudinal data from the German Socio-Economic Panel and exploiting exogenous variation in interview timing throughout 2001, I find that the terror attacks in the US caused an immediate shift of around 40 percent of one within standard deviation to more negative attitudes toward immigration and resulted in a considerable decrease in concerns over xenophobic hostility among the German population. Furthermore, in exploiting within-individual variation this quasi-experiment provides evidence on the role of education in moderating the negative terrorism shock.

German Summary

Vor dem Hintergrund voranschreitenden demographischen Wandels sowie steigendem Fachkräftemangel gewinnt Zuwanderung zunehmend an Bedeutung für die europäischen Arbeitsmärkte. Zudem stellt in einer globalisierten und hochgradig arbeitsteiligen Gesellschaft ethnisches Humankapital von Immigranten an sich einen ökonomisch wertvollen Faktor dar. Ethnische Vielfalt und kulturelle Diversität sind allerdings in der gesellschaftlichen Diskussion häufig Ausgangspunkte von wirtschaftlichen Verdrängungsängsten und Überfremdungsgefühlen. Vordergründig scheinen auch die oft schlechte wirtschaftliche Performance von Migranten, sowie ein vermeindlich unzureichender Integrationswille von Seiten der Migranten selbst gegen eine Ausweitung von Zuwanderung zu sprechen.

Die Integration der in Deutschland geborenen Personen mit Migrationshintergrund, der sogenannten zweiten Generation, gewinnt zunehmend an politischer und ökonomischer Relevanz. Heute haben in Deutschland bereits rund ein Drittel der Kinder im Alter von bis zu fünf Jahren einen Migrationshintergrund, was die zukünftige Bedeutung dieser Gruppe für den deutschen Arbeitsmarkt verdeutlicht. In Bezug auf Integrationspolitik stellt der Grad, in dem sie Bildungs- und Chancengleichheit erfährt, den vielleicht wichtigsten Erfolgsindikator dar. Betrachtet man ökonomische Ergebnisvariablen, wie z.B. Bildungsniveau und Arbeitsmarkterfolge, so findet man jedoch einen beständigen Nachteil dieser Gruppe gegenüber den Einheimischen. Die ökonomische Integration der zweiten Generation scheint nicht zu gelingen.

Vor diesem Hintergrund ist es Zielsetzung dieser Arbeit, die empirische Analyse potentieller Integrationsbarrieren auf hauptsächlich drei Fragenkomplexe auszuweiten: Zum einen wird der Frage nachgegangen, wie sich der Prozess kultureller Integration aus einer generationenübergreifenden Perspektive darstellt und welche Auswirkungen sich auf den ökonomische Erfolg der zweiten Immigrantengeneration erkennen lassen. Des Weiteren wird untersucht, inwieweit der Bildungsnachteil der in Deutschland lebenden zweiten Migrantengeneration durch grundlegende Unter-

schiede des sozioökonomischen Hintergrundes zwischen Kindern mit und ohne Migrationshintergrund zu erklären ist. Drittens wird die Frage behandelt, in welchem Maß nicht-ökonomische Faktoren ausländer- und immigrationsfeindliche Tendenzen in der deutschen Gesellschaft beeinflussen.

Die nachfolgend beschriebenen Studien, die sich der Beantwortung dieses Fragenkomplexes widmen, nutzen Datenmaterial des Sozio-ökonomischen Panels (SOEP), einer repräsentativen Längsschnittstudie privater Haushalte in Deutschland. Das SOEP beinhaltet die gegenwärtig größte Wiederholungsbefragung von in Deutschland lebenden Ausländern und Personen mit Migrationshintergrund. Insbesondere Haushalte mit einem Haushaltsvorstand türkischer, spanischer, italienischer, griechischer und ehemals jugoslawischer Herkunft sind überproportional repräsentiert. Die Daten geben Auskunft zu Fragen über Einkommen, Erwerbstätigkeit, Bildung und Gesundheit. Einwanderungsspezifische Fragestellungen beinhalten unter anderem Aspekte der Sprachverwendung, des Kontakts mit Einheimischen sowie der Identifikation mit der deutschen Kultur bzw. der des Heimatlandes. Der Längsschnittcharakter des SOEP erlaubt zudem die Analyse generationsübergreifender Integrationsprozesse sowie individueller Einstellungen im Zeitverlauf.

Der erste Teil der Arbeit (Kapitel 2) geht der Frage nach, wie sich die Identifikation von Zuwandererfamilien mit dem Heimat- bzw. Aufnahmeland im generationenübergreifenden Prozess der elterlichen Bildungsinvestitionen widerspiegelt. Konkret wird untersucht, ob Eltern, die in stärkerem Maße in die deutsche Gesellschaft integriert sind bzw. eine starke Bindung an die Kultur ihres Herkunftslandes beibehalten, den Schulerfolg ihrer Kinder mehr oder weniger erfolgreich fördern. Geht man davon aus, dass Eltern ihre kulturelle Identität in die Kindererziehung einfließen lassen, so ergibt sich ein Zusammenhang zwischen dem Grad elterlicher Identifikation mit dem Aufnahme- bzw. Herkunftsland und dem Bildungserfolg ihrer Nachkommen. Um diesen Zusammenhang empirisch zu untersuchen, betrachtet die Studie den ersten Bildungsübergang von Kindern mit Migrationshintergrund im deutschen Schulsystem von der Grundschule in weiterführende Schulen.

Empirische Schätzungen ergeben, dass beide Dimensionen elterlicher Identität – sowohl die Bindung an das Herkunftsland wie auch die Identifikation mit der deutschen Gesellschaft – in einem positiven Zusammenhang mit der Wahrscheinlichkeit stehen, einen höheren Bildungsweg einzuschlagen. Dabei sind es die Mütter, deren Verbundenheit zum Aufnahmeland bedeutend ist, während in Bezug auf die Väter die relativ stärkere Verbundenheit zum Heimatland einen signifikant positiven Effekt aufweist. Dies könnte darauf hinweisen, dass eine kulturelle Integration von

Migranten in Bezug auf den ökonomischen Erfolg zukünftiger Generationen mit Migrationshintergrund wünschenswert ist, wobei die Beibehaltung einer Bindung an das Herkunftsland keinesfalls hinderlich sein muss – im Gegenteil, diese kann einer ökonomischen Integration ebenfalls zuträglich sein. Eine integrierte, also multiethnische Identität scheint demnach kein Hindernis ökonomischen Erfolges zu sein, sondern sie könnte vielmehr in Hinblick auf eine langfrisitig erfolgreiche Arbeitsmarktintegration von Immigranten wünschenswert sein.

Der zweite Teil der Arbeit (Kapitel 3) beschäftigt sich mit Bildungsunterschieden zwischen in Deutschland lebenden Kindern mit und ohne Migrationshintergrund. Kinder mit Migrationshintergrund schlagen in Deutschland vielfach niedrigere Bildungsgänge ein und sind in Hauptschulen überrepräsentiert. Die Ursache hierfür kann in der unterschiedlichen Zusammensetzung beider Gruppen hinsichtlich des sozioökonomischen Familienhintergrundes liegen. Zusätzlich könnten auch migrations-spezifische Faktoren, wie etwa mangelnde Sprachkenntnisse ursächlich sein. Aus diesem Grund werden in dieser Studie die Disparitäten zwischen Kindern mit und ohne Migrationshintergrund beim Bildungsübergang in die weiterführenden Schulen des Sekundarschulsystems zerlegt: Einerseits in einen "erklärten" Teil, der auf Unterschiede in der sozioökonomischen Zusammensetzung zurückzuführen sind, und andererseits in einen Teil, der "unerklärt" bleibt und auf migrations-spezifische oder andere Faktoren zurückzuführen ist. Konkret werden in der Studie Disparitäten hinsichtlich von Übergangsempfehlungen, tatsächlichen Übergangsquoten, sowie die Bildungspartizipation im Alter von 17 Jahren betrachtet.

Die Ergebnisse zeigen, dass ethnische Disparitäten am zentralen Bildungsübergang zu den weiterführenden Sekundarschulen hauptsächlich aufgrund des im Mittel niedrigeren sozioökonomischen Status von Familien mit Migrationshintergrund auftreten. Wird dies in der Analyse berücksichtigt, so zeigt sich, dass es keine weiteren Bildungsunterschiede zwischen vergleichbaren Kindern mit und ohne Migrationshintergrund gibt. Im Rückschluss lassen sich demnach ethnische Bildungsdisparitäten, wenn überhaupt, nur in geringem Maße auf migrations-spezifische Faktoren zurückführen. Vielmehr deuten die Ergebnisse dieser Analyse darauf hin, dass politische Maßnahmen sich auf die Senkung genereller sozialer Ungleichheiten im deutschen Bildungssystem konzentrieren sollten. Dabei sollte insbesondere eine frühe Förderung (d.h. bereits im Vor- und Grundschulbereich) von Kindern aus sozial benachteiligten Schichten im Vordergrund stehen, um sozioökonomische Disparitäten beim Übergang in das Sekundarschulsystem zu vermeiden.

Der dritte Teil der Arbeit (Kapitel 4) untersucht Aspekte potentieller Integra-

tionsbarrieren, die von Seiten der deutschen Aufnahmegesellschaft ausgehen. Neuere Forschungsliteratur führt an, dass ablehnende individuelle Einstellungen gegenüber Zuwanderung oder gegenüber Migranten nicht ausschließlich aus wirtschaftlichen Verdrängungsängsten resultieren, sondern dass Aspekte eine Rolle spielen können, die nicht ökonomisch motiviert sind, sondern vielmehr auf ethnisch-motivierten Vorurteilen und Intoleranz beruhen. In diesem Zusammenhang untersucht diese Studie individuelle Einstellungsänderungen in Folge des unerwarteten – und in erster Linie nicht-ökonomischen – Schocks der Terroranschläge des 11. Septembers. Die Tragweite der Geschehnisse des 11. Septembers 2001 legt nahe, dass sie sich nicht allein auf individuelle Einstellungen in den USA selbst, sondern auch in der deutschen Gesellschaft ausgewirkt haben. Die Analyse von Auswirkungen eines solchen exogenen, nicht-ökonomischen Schocks auf Einstellungen gegenüber Zuwanderung und Migranten gibt Aufschluss darüber, ob und in welchem Ausmaß nicht-ökonomische Faktoren zur Bildung ausländer- und immigrationsfeindlicher Tendenzen beizutragen vermögen. Der Fokus der Analyse liegt in der Schätzung des tatsächlichen kausalen Zusammenhanges zwischen exogenem Schock und Einstellungsänderungen auf individueller Ebene unter Ausnutzung zufälliger Variation der Befragungszeitpunkte innerhalb des SOEPs.

Die Ergebnisse der empirischen Analyse zeigen, dass die Anschläge des 11. September im Jahr 2001 tatsächlich eine deutliche und signifikant negative Verschiebung individueller Immigrations-Einstellungen bewirkt haben. In Folge der Anschläge sorgten sich Personen in Deutschland Ende 2001 im Durchschnitt in höherem Maße um Zuwanderung nach Deutschland und gleichzeitig sank ihre Besorgnis um Ausländerfeindlichkeit. Die zusätzliche Analyse potentieller Effekt-Heterogenität zeigt, dass der kausale Effekt im Hinblick auf Einstellungen gegenüber Zuwanderung nach Deutschland in der Gruppe der Hochgebildeten nur gering bzw. nicht signifikant ausgeprägt ist. Dies könnte auf eine mäßigende Rolle von Bildung hinweisen. Dagegen mag jedoch sprechen, dass sich der Schock des 11. September hinsichtlich der Sorgen um Ausländerfeindlichkeit für sämtliche untersuchte Gruppen gleichermaßen auswirkt. Insgesamt bestätigt diese Untersuchung die Relevanz nicht-ökonomischer Faktoren in der Ausbildung negativer Einstellungen gegenüber Zuwanderung und Migranten. Die Ergebnisse früherer, hauptsächlich auf Querschnittsdaten basierender Studien werden damit um empirische Befunde basierend auf einer Längsschnittsbetrachtung erweitert. Politische Maßnahmen, die auf die Steigerung öffentlicher Unterstützung von Zuwanderung und Integration von Migranten abzielen, sollten daher berücksichtigen, dass individuelle Einstellungen keineswegs stabil sind, sondern

potentiell von Interessensgruppen (z.B. durch groß angelegte Medienkampagnen) beeinflusst und manipuliert werden können. Richtungsweisend für weitere Forschungstätigkeit ist ein möglicher Bildungseffekt in diesem Zusammenhang, der solche Beeinflussung mäßigen und abschirmen könnte.

Simone Schüller

Curriculum Vitae, February 2013

Aus datenschutzrechtlichen Gründen
wird in der elektronischen Version
auf einen Lebenslauf verzichtet.

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Erklärung gem. § 9 der Promotionsordnung zum Dr. rer. pol. des Fachbereichs Wirtschaftswissenschaft der Freien Universität Berlin vom 16. Juli 2008

Hiermit versichere ich, dass ich die vorliegende Dissertation selbstständig verfasst habe.

Als Mitarbeiterin des Forschungsinstituts zur Zukunft der Arbeit (IZA) bin ich zudem den "IZA Guiding Principles of Research Integrity" verpflichtet.

Simone Schüller

Bonn, February 2013