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ABSTRACT

Determinants of Integration and its Impact on the Economic Success of Immigrants: A Case Study of the Turkish Community in Berlin*

Using a new data on 590 Turkish households in Berlin, we investigate the determinants and impact of integration on economic performance. We find that usual suspects such as time spent in Germany and education have positive impact, while networks have no impact on integration. There is strong evidence that political integration and the degree of full integration promote income. Using endogenous switching regression models, we show that local familial networks increase the income of unintegrated migrant groups only, while transnational networks decrease it. We also find that education is more welfare improving for integrated than non-integrated immigrants.

JEL Classification: O15, J15, C25, D10

Keywords: integration, economic success, ethnic networks, Turkish migrants

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1. Introduction

When the German chancellor Angela Merkel set up a national 'Integration Summit' in July 2006, expectations for better integration were fueled among ethnic minorities, religious groups and political actors. This event was supposed to introduce intensive communication among all actors involved in the integration process. Until the adoption of a new immigration law in 2005, the official policy denied to perceive Germany as a country of immigration and had thus for a long time neglected the need for integration.[1] Behind the recent efforts to bring integration on the political agenda were the fears of radicalism and terror flashpoints in Germany (SPIEGEL online 2007). Additional political pressure was generated when the educational rankings of the OECD revealed that children of immigrants suffer from structural disadvantages in Germany (OECD 2007a: 174ff.). Most of the public debate focused on the political desirability of integration; the understanding that ethnic and cultural heterogeneity may be socially costly if realized in parallel societies developed only recently.[2] For instance, von Löffelholz (2001) has estimated the foregone macroeconomic benefits from non-integration of ethnic minorities at one to two percent of GDP in Germany, mostly due to high unemployment among low-skilled migrants. On the micro level, immigrants in some cases faced the paradox situation of having restricted access to the labor market while being entitled to social assistance with a potentially counter productive incentive structure (OECD 2007b).

Until recently the economic literature on migration and integration has been dominated by neoclassical thinking focusing on the cost-benefit calculations of migrants. In recent years, however, the topic has attracted new attention in the field of cultural economics. Ethnicity and culture, it is argued there, may impact people's preferences and behavior and thus lead to deviations from what is expected in neo-classical thinking. Owing to both strands of literature, our paper deals with differences in the strategies of economic agents and asks whether ethnicity may mobilize alternative resources for economic action of immigrants.[3]

[1] It has to be noted that in 2004 about 500 million Euro of the Federal budget were ascribed for measures fostering integration (OECD 2007: 210). However, no comprehensive integration policy was formulated.
[2] In Germany, the sociologist Wilhelm Heitmeyer introduced the notion of the "parallel societies" in the 1990s.
[3] By immigrant we mean either a migrant or a descendent of a migrant. The nature of immigration to Germany differs markedly with that of "classic" immigration countries such as the USA or Canada. Labor induced immigration peaked in the 1960 under the *Gastarbeiter* regime. Initially, immigrants predominantly from Turkey, Yugoslavia, Greece and Italy, were supposed to return after several years. The recruitment of guest workers from Turkey was initiated in 1961 through a bilateral agreement. When Germany's economic post-war success came to a halt, the recruitment of guest workers was stopped in 1973. In the following years, immigration continued, however, in the framework of family reunification (Zimmermann 1996).

Generally speaking, we argue that an immigrant chooses between integration into the host country—with better access to the labor market—and joining or remaining in an ethnic network—with better access to ethnic goods, ethnic labor market niches and informal insurance mechanisms. In this paper we reformulate the issue of integration in economic terms and conduct an in-depth economic analysis of the interrelationships between integration and economic success with a special focus on the role of transnational and local ethnic networks, an issue almost entirely ignored in the economic and political debate in Germany.

We employ newly developed data collected from 590 Turkish households residing in Berlin to analyze the determinants of the integration of Turkish immigrants into the German polity, society and economy and the impact of this integration on their economic welfare. Different from the existing literature, we take into account the role of local and transnational networks on both integration and economic success of Turkish immigrants. In addition, we account for three different forms of integration to assess their relative importance in economic success. Specifically we aim at providing an empirical and conceptual analysis of the following questions: 1. What determines integration? 2. Does integration help economic success of immigrants? 3. Do ethnic and transnational networks affect integration and income? 4. Do the impacts of ethnic or transnational networks for gaining economic success differ by integration status? 5. Do the integration and network channel of income generation differ over the distribution of migrants' unobserved abilities?

Our study fits well in the rapidly growing literature on the economic success of immigrants and the impact of their choices to integrate into the host country on their economic performance. It contributes to the existing literature in four ways. The first novelty of the paper is the use of an up to date comprehensive data set on the Turkish population in Berlin collected in mid 2007, which allows us to distinguish among many different characteristics of the Turkish community in Berlin such as their sub-ethnic characteristics, familial, local and transnational networks, and social links to their home country. The second contribution of this study to the literature is that we combine the 'ethnic identity' literature with the 'network formation and maintaining' literature in the analysis of the determinants of economic success. In particular, by using an endogenous switching regression model we provide an analysis of the joint impact of integration and the familial, local and transnational networks on the economic success of migrants, and investigate their effect over the distribution of immigrants' unobserved characteristics. Third, different from the existing literature on migrants in Germany that mainly use national level data, our data allows us to explicitly take into account

the interactions of the above mentioned variables prevailing at the local level. Finally, our analysis focuses exclusively on Turkish migrants. To the best of our knowledge, there is no study providing an economic analysis of the determinants and the interrelationships between integration and economic success entirely in the context of Turkish immigrants, the largest migrant group in Germany, which is characterized by a certain degree of heterogeneity.

The main findings of our analysis confirm the existence of determinants of integration known from the literature. Personal characteristics such as education, being female head of household, years since migration, being born in Germany are positively associated with integration, and familial, local or international networks have no impact. We find that, among the three integration variables on political, social and economic integration only political integration has a significant impact on economic success. However, we find strong evidence that the degree of integration, which is measured as the combination of all of the above three forms of integration, has a strong positive impact on economic success. This implies that it is not the partial integration but the high level integration in all of the above three dimensions that has a strong impact on income. We also find that familial networks—having a larger extended family in Germany—is positively associated with economic achievements, while maintaining a transnational ethnic network is negatively associated with it. When investigating the effect of both integration into the host country and networking over the distribution of unobserved ability it turns out that integration is a positive determinant of economic success in upper quantiles only. Less-able Turkish immigrants do not receive an economic integration premium, while networking helps their economic position.

Given that Berlin holds—in absolute terms—the largest and most heterogeneous Turkish population in Germany (Schönwälder and Söhn 2007) and that data collection is carried out carefully using random sampling methodology, to some extent, our findings can be generalized to the Turkish population residing in Germany. We would also like to stress the limitations of our analysis. Given that we use cross sectional data, inter-temporal analysis taking into account unobservable characteristics of immigrants is beyond the scope of this paper. Further, we do not deliver an analysis of endogenous ethnic enclave formation.

The remainder of the paper is structured as followed: In section 2 we give an overview of the theoretical background of our analysis and a review of the relevant literature. Section 3 introduces the new data set and the methodology employed. In Section 4 we present descriptive and regression results, before we conclude with policy relevant implications.

2. Integration and Economic Performance of Migrants: Review of the Theoretical and Empirical Literature

This section provides an overview of the two strands of literature, which have to a large extent been separated in research: the integration of immigrants into host countries and their economic success. The body of economic literature on integration has surged in importance in many European countries during the last 15 years as integration failures and subsequent costs became increasingly visible. The literature on the economic success of immigrants has received much attention in the USA following the seminal paper by Chiswick (1978). Yet, the incorporation of integration into this strand of literature has only very recently been pursued. Special attention will be paid to familial and local ethnic networks in Germany and transnational networks in Turkey, which have received limited interest in the economic literature on integration and economic success.

2.1. Integration of Migrants

Integration has become a widely used political concept, but requires clarification for scientific use. The literature on integration of immigrants is faced with the problem of defining the multidimensional concept of integration and measuring an appropriate outcome variable. The larger part of scientific publications has focused on subjective integration measures such as self-assessed assimilation, since objective indicators (except for citizenship) seem difficult to define (Dustmann 1996; Zimmermann 2007; Constant et al. 2006). In our paper we understand integration as a process of developing the membership in a specific society and gaining access to its political, economic and social resources. Our definition comprises the objective dimension and spans over various aspects of life.

The economic literature on social integration of immigrants is of an empirical nature. As a common approach, social and political integration is mainly associated with exposure to the host country and the consequent habituation to new tastes and rules (Dustmann 1996). An underlying assumption of this approach is that integration is a natural process without alternatives. To us it is surprising that integration efforts have hardly been explained by incentive structures or networks (for a discussion see DeVoretz 2008). Integration seems attractive for an immigrant as soon as it promises economic success, e.g. opens up labor market chances or is expected to be associated with better future for the immigrant's

children. Where labor market discrimination prevails, the payoffs from integration (what we later call *integration premium*) is expected to be small. The notable exception in the economic literature connected to incentives consists of papers on return migration as the efforts to integrate might be reduced by future return plans (cp. the discussion on return selectivity in Borjas and Bratsberg (1996)).

In the empirical literature on habituation and assimilation, three key factors have been investigated: time exposure, geographic exposure and social exposure. Years since migration is often used to measure the exposure to the host culture and is generally positively associated with integration (Dustmann 1996; Constant and Massey 2002). In several studies age at entry into the host country is used as a proxy for adaptability as older immigrants are expected to be highly habituated to the country of origin while younger migrants face fewer problems to get used to the new environment. In the same vein, pre-migration characteristics such as education in the home country tend to hamper integration (Constant et al. 2006). Similarly, place of residence matters for integration as it is associated with inter-ethnic contact opportunities. In more or less homogenous enclaves we observe both, less incentive but also less opportunity for integration (Chiswick and Miller 1996).[4] Borjas (1995), for instance, found slow convergence of human capital endowments of immigrant groups towards natives due to the intergenerational transmission of human capital inside ethnic enclaves. As the data sources are limited for Germany, the economic literature has been reluctant to evaluate the impact of residence on integration.[5] We understand social exposure as established contacts to host country institutions (Yang 1994). Children in school age, for instance, have been found to improve parents' integration (Dustmann 1996). Having close German friends fosters integration (Constant et al. 2006), while transnational family ties significantly reduce it (Constant and Massey 2002). The fact that transnational family context impacts migrants' integration strongly qualifies pure human capital approaches.

The relationship of ethnic networks with integration has naturally received much attention in sociology in the context of the social capital literature. The proponents of social capital theory argue that membership in horizontal networks can improve social trust and thus foster political integration of immigrants (cp. Coleman 1990; Putnam 2000). In a series of

[4] However, Yang (1994) argues that information flows about naturalization are more easily shared in ethnic enclaves thus fostering integration.
[5] In the geographic literature, Anita Drever (2004) has found that ethnic enclaves in Germany do not generally have detrimental effects on immigrants' integration.

publications, the determinants of political and social integration have been studied. Haug (2003) finds that social integration into Germany, which she proxies by inter-ethnic friendships is higher among men and later migration cohorts. Berger et al. (2004) investigate the determinants of political integration among ethnic communities in Berlin and argue that—after controlling for general political interest—better educated and cross-ethnic network members are better integrated, while membership in an ethnic network alone does not improve integration. In a comparable study on Amsterdam, Tillie (2004) finds that ethnic network membership does increase integration, but that women are generally less integrated.

2.2. Economic Success of Migrants

Investigating economic success requires a clear benchmark (e.g. as being employed, earning at least a specific amount of money etc.) or a comparison group. Much of the literature on the economic success of immigrants is concerned with the analysis of the immigrants' labor market performance in comparison to the 'native' population or to earlier cohorts of immigrants (Borjas 1994). Traditionally, the economic success of immigrants has been studied against the background of human capital theory and segmented labor market theory. However, recent developments in cultural economics have added the concepts of ethnicity and integration to this literature.

Human capital theory understands migration as an investment strategy of migrants who try to enhance their productivity after arrival. This strand of literature has a distinct tradition in the North American context initialized with the seminal paper by Chiswick (1978), who argued that migrants lose on economic status upon arrival in the destination country but can improve their disadvantaged economic position by acquiring human capital specifically for the labor market in the destination country. The most cited positive determinants of economic success are human capital (Chiswick and DebBurman 2004), language proficiency (Espenshade and Fu 1997) and labor market experience (Chiswick et al. 1997). For Germany, the economic success of immigrants is well documented, especially in the fields of employment (Kogan 2004) and self-employment (Constant and Zimmermann 2006). For the US, Borjas (1985) pointed out that cross-section estimations might lead to biased results as the quality of immigrant cohorts may have seriously changed over time.

Albeit we expect less of this change for the German immigration under consideration, we control for immigration cohort in our analysis to account for this potential bias.

Segmented labor market theory argues that due to their initial endowments migrants tend to be employed in the labor intensive sector of the economy where they might never catch up with natives (Piore 1979). This literature has empirically analyzed migrants' economic failure in the labor market and points out that discrimination in access to specific occupations causes a (persistent) wage gap. However, after controlling for occupational status the empirical findings of this literature are similar to those of the human capital approach (Constant and Massey 2005 for Germany; Adsera and Chiswick 2007 for Europe). Both provide evidence for a narrowing earnings gap between natives and immigrants due to relatively high returns to education while adaptation to the host country only matters for human capital theory.

The cultural economics perspective claims that ethnic and social variety may be economically beneficial as heterogeneous societies are endowed with more diverse preferences, abilities and problem solving strategies (Alesina and La Ferrara 2004). However, variety can only enhance productivity if social interaction takes place. Having intense social interaction with friends, colleagues etc. from the host country increases information flows for opportunities in the public labor market and the access to capital from mutual lending. As noted in the literature, sequential interaction can also build up trust and foster economic performance (Lorenz 1999). Although the literature links integration to various forms of economic indicators, it is rarely examined as a determinant of economic success. Among the few such studies, Dustmann (1996) found that subjective assimilation is insignificant in determining economic success. More objective measures of integration seem to play a significant but weak role in determining economic behavior (Zimmermann 2007). However, in most of this literature, integration remains an exogenous fact and is not placed inside an individual's utility maximization. This may coincidentally result in stereotype ascriptions of immigrants. We argue that the integration variable is an outcome of other (non-independent) processes, and needs to be understood well before employing it as a determinant of economic behavior and success.

The economic literature on ethnic networks has focused on information flows in the labor market, building on the observation that a large share of employment positions is found through personal contacts (Granovetter 1995; Calvo-Armengol 2004). In a setting with unemployment and search costs, workers could use their personal networks to find employment (Topa 2001) or they could be selected by firms that search through their

employed incumbents (Montgomery 1991). In using rain variability as an instrument for network density of Mexican immigrants in the USA, Munshi (2003) shows the supporting effect of ethnic networks in finding employment, especially among newcomers.

Much of the integration and economic success literature can be subsumed under 'national approaches' since they evaluate the effects of immigration and integration on economic success at the national level. Hereby they likely disregard local structures potentially important for migrants. Topa (2001) showed in an application to urban unemployment in Chicago that physical distance significantly determines employment-related information flows in networks and that these flows are stronger in ethnically homogeneous neighborhoods. Bauer, Epstein and Gang (2005), however, find that sorting into ethnic neighborhoods may partly explain enclave effects and that lower ability for language acquisition may direct immigrants to districts where their prospects for integration are poorer. These results—in combination with the observation of ethnically clustered districts in Berlin—promote our choice of a local approach.

2.3. An Incentive and Network Based Approach to Integration and Economic Success

The goal of our approach is twofold: On the one hand, we want to incorporate economic incentives into the integration function; on the other hand, we incorporate integration status and networking into the economic success function to account for potential substitution. Our reasoning offers an avenue for thinking economically about why it might be irrational for some members of ethnic minorities to integrate into the host society and thus accounts for the mutual dependence of both integration and economic success (cp. DeVoretz 2008).

Let us assume that individual agents gain utility from either integrating into the host society or participation in their ethnic network. Ethnic membership comprises some sort of ethnic capital which can be of relevance, for example, when seeking employment and thus enhance economic success. Ethnic networks have several advantages for their members: trading inside the enclave might be easier, e.g. due to lower transaction costs (Lazear 1999), job opportunities are faster and more efficiently shared (Topa 2001), discrimination is absent and the demand for ethnic goods can be easily met. Maintaining membership in ethnic networks is costly (*requires affirmation*). An important finding in this literature is that ethnic enclaves, i.e. ethnically more or less homogenous residential areas, produce strong

externalities on the economic success/behavior of individuals residing in such an ethnic context. The disadvantages of ethnic networks may lie in potential human capital externalities, in limited labor market options or in the development of specific welfare use cultures (Borjas and Hilton 1996; Bertrand et al. 2000). For instance, remaining in the ethnic network could prevent the migrant from ever integrating and thus potentially leads to a lower income-generating path if wages in the open labor market are higher. This seems especially realistic if immigrants work mostly in a segmented labor market (cp. Piore 1979).[6] The foregone earnings through non-integration are called *integration premium*. Integrating, however, could lead to expulsion from the ethnic network, i.e. exclusion from information flows inside the ethnic labor market, informal insurance schemes etc. (*switching costs*). We believe that ethnic clustering in urban enclaves plays an important role in this decision process. In particular, if the neighborhood consists mostly of ethnic community members, the externalities from integrating into the host country's society may be especially destructive. The strength of ethnic ties may also differ across ethnicities and religious groups, according to the size and quality of their network (Cardak and McDonald 2004). Thus, switching costs may vary across sub-ethnic groups.

We believe that integration can positively impact economic success through three main channels, reflected in the three dimensions of our definition of integration (cp. Yang 1994): political, social and economic integration, all of which relate to the issue of economic opportunities. Political integration, i.e. becoming a German citizen, secures a life-long perspective on Germany being the geographic and economic focal point. This reduces risks and potentially sets free or increases investment into human capital transferability (education) or business plans. Persons who acquire the citizenship of the destination country might in general have higher levels of adaptability which potentially makes them more flexible and more effective on the labor market, especially since the criteria to gain citizenship might be "valuable" characteristics in the labor market. Our economic integration dimension—being employed by a German boss or employing German employees—is associated with exposure to the host country's labor market and the social integration, i.e. social interaction with natives, makes variety productive. Recent empirical results on Germany have shown that integration (measured as cultivating both culture of origin and destination) instead of assimilation (i.e. homogenization) pays off economically for immigrants (Zimmermann 2007).

[6] Our reasoning is supported by findings by Constant and Massey (2005) that discrimination of ethnic minorities is more likely to appear in the access to the German labor market rather than in the wage setting

As follows from this, an immigrant will integrate into the host society only if (i) the costs are smaller than the expected gain from integration, and if (ii) the gains from integrating minus the foregone gains from remaining in the ethnic network are positive (cp. Yang 1994; DeVoretz 2008). Comparing gains and costs from integrating and networking results in the question whether ethnic networks can substitute for integration. In the sociological literature, the discussion on this issue was first introduced (and positively judged) by Fong and Ooka (2002).

To sum up, the findings of the existing literature on integration and economic success suggest that both integration and economic performance are mainly driven by demographical features of migrants (such as time spent in the host country, age, language proficiency, education level and labor market experience), characteristics of households; exposure to social and cultural life in the host country, and social networks of the migrants. Although the majority of studies acknowledge the interlinkages between integration and economic success, very few have studied these two variables simultaneously. In addition, the empirical analysis of the impact of local and transnational networks on both integration and economic performance has been under developed in the literature. Thus our paper provides thorough analyses of the determinants of integration and economic performance and explicitly takes into account the potential interlinkages between these two variables. We also investigate the impact of local and transnational networks of the migrants on their integration as well as their economic performance.

3. Data and Methodology

3.1. Data

Virtually all studies on immigrants' economic behavior and success in Germany are based on the German Socio-Economic Panel (GSOEP). Despite the strength of longitudinal data for the analysis of economic outcomes of migrants, the number of observations in GSOEP data is too small for an in depth analysis of integration and economic success of individual migrant communities. The total number of migrant individuals surveyed in GSOEP during 1996-2004 is 1280, which includes all major migrant groups in Germany. Among these individuals only 430 are Turkish. Our data include 590 Turkish households residing in

mechanism inside the labor market.

Berlin as of 2007. Furthermore, the information on immigrants' social networks, their households and familial linkages in the host and home country, and behavioral choices are covered in more detail in our data than in the GSOEP data.

Data collection was conducted during May through June 2007 in eight major districts of Berlin: Kreuzberg, Mitte, Neukoelln, Tempelhof/Schoeneberg, Spandau, Reinickendorf, Charlottenburg/Wilmersdorf and Steglitz/Zehlendorf, which hold 98.2% of the Turkish population of Berlin. The distribution of Turkish population across these districts and the number of interviews conducted in each district are provided in Table 1. Berlin has been chosen as the focal point of the study as it holds the largest Turkish population in Europe outside Turkey. In addition, Berlin is one of the most cosmopolitan cities of Germany, which enables us to cover households from different socio-economic backgrounds.

In data collection, we employed a stratified random sampling strategy with respondents being chosen with probability proportional to size (PPS) of the Turkish community in the districts. The interviews were conducted after random selection rules of interviewees, mostly in public spaces, (i.e. parks, streets, in front of houses), and at typical meeting points of the Turkish population (such as cafés, shops, mosques, clubs etc.). The interviewers were employed through a competitive application and interview procedure. They were all post graduate students, fluent in both Turkish and German and had experience in conducting interviews. They were also provided training on the properties of random sampling, interview techniques and manners. To ensure the standardization of the data collected by different interviewers, pilot interviews were conducted by the project leader in the presence of all interviewers. Furthermore, throughout the duration of data collection, we held regular meetings with the interviewers to internalize their feedback and ensure the quality and timely delivery of data collection.

Given that one of the main objectives of the project was to assess the remittances of the Turkish migrants, only the households who are sending money home are included in the sample. However, the interviewers were asked to keep a report of the persons who responded as not sending money back home. The interviewers reported that on average out of every ten Turkish individuals approached, three did not send any money home thus are not included in the survey. Since the area of data collection included all major districts of Berlin where Turkish migrants reside and that the data was collected through a random sampling strategy, it is reasonable to state that our data is representative of the Turkish community residing in Berlin and sending money to Turkey.

The data set comprises detailed information on demographics, socio-economic background, social and economic behavioral variables, and local and transnational networks of head of households and their household members. However, our data set also has some limitations. First, it covers one city only and such restricts the scope for generalizations, even though Berlin holds the largest community of Turkish migrants in Europe. Second, the sampling framework might potentially lead to an under representation and self-selection of women as they might be less likely to be present in public spaces. We aimed to reduce this problem by hiring a gender-balanced group of Turkish interviewers with clear instructions at several interviewer trainings on how best to conduct random selections. Third, the data set is a cross section survey and we cannot track immigrants over time.

3.2. Methodology

In this section we discuss issues of operationalizing the concepts of main interest, namely different forms of integration, economic success and ethnic networks, and provide an overview of the variables used in the multivariate analysis. The variables used in our analysis and their theoretical expected impact on integration and economic success is reported in Table 2. We consider three dimensions of integration: political, social and economic integration. Under political integration we understand the process under which a migrant receives access to political and social rights. A good measure of this integration is *citizenship* which grants voting rights unavailable to non-Germans. In our sample, almost 40 percent of respondents hold German citizenship (Table 3a). Social integration comprises social connections with the host country. We proxy this form of integration with a variable counting the number of *close German households* who were ready to lend money to the respondent if he/she found himself/herself in serious financial troubles. Having German friends reflects access and contact to the people; it confirms knowledge of and trust in Germans and Germany.[7] Economic integration means the process of gaining the economic power to freely participate in social life, to be ordinarily protected against health risks and income fluctuations and to be able to offer ordinary education to children as well as care for elderly. We are aware of the fact that this category is somewhat problematic, as having enough income or insurance reflects economic success rather than integration. To resolve

[7] The interviewers often reported on the following stereotype: When asking the question about German households who would quite surely lend money to the Turkish household in need, many respondents answered that Germans did not help each other, so why should they help Turks in financial troubles?

this issue, we use "having a *German boss* or *German employee*" as proxy as these might increase the likelihood of economic integration, the decision of staying longer in Germany and to install the focus of life in Berlin. Thus, four variables are used as a proxy for different types of integration and the degree of integration: (i) a binary political dimension outcome (citizenship), (ii) a binary social integration outcome (having close German friends), (iii) a binary outcome proxying economic integration (having a German boss or German employee), (iv) an index variable, named as *integration index*, consisting of the summation of all three dimensions of integration, ranging from zero (totally non-integrated) to three (integrated in all dimensions). This variable takes the value one, two or three if the respondent has one, two or three of the above specified conditions, respectively.

The definition of economic success is highly dependent on individual preferences thus making the choice of the perfect indicator a problematic undertaking. However, we believe that 'per adult equivalent household income' is a good measure since it reflects the consumption potential of a household. We analyze economic success on the household rather than individual level, arguing that resources are shared inside households and that labor decisions are taken inter-dependently. Thus, economic success of an individual consists of their own net monthly income plus the (pooled) net monthly income of other household members. Here net income refers to the income after tax, social security and pension contributions. The sample average non-equivalence adjusted net household monthly income is 1,856 € (Table 3b). The explanatory variables used in this study comprise individual demographic characteristics, household conditions, financial conditions and social ties. Determinants of integration and economic success regularly employed in the literature consist of demographic variables, migration related aspects and current living conditions.

The impact of age on integration is ambiguous. Young persons are expected to find integration easier, due to higher social exposure at school, university or job and because of their potentially higher level of language skills; thus age is expected to be negatively associated with integration (cp. Constant et al. 2006). However, age may also positively impact integration as older immigrants who decide to stay might foster integration efforts.[8] To capture non-linear correlations, we include squared age term in the analysis. Years since migration are expected to contribute positively to integration (cp. Buchel and Frick 2005).

[8] Under German law, German citizenship is not assigned according to the place of birth. After reforms in the citizenship law, second generation immigrants have to choose either the German or Turkish citizenship at the age of 18. However, our sample is restricted to the persons that are economically active, i.e. older than twenty.

Plans to return home operate in the opposite direction. Education is expected to be positively correlated with integration, as education generally increases efficiency. Education in Germany is supposed to have a positive impact on integration as it may reflect migration at a comparatively young age, high contact rates with Germans and a high level of country-specific knowledge.[9]

The determinants of economic success consist of variables quite standard to the income generation process of households, such as household size and composition. To capture life cycle effects, we include age, gender and educational attainment of the household head. Marital status has an impact on economic success through various channels, i.e. life style change, moral and economic support of spouse etc. In Germany it has an additional effect on income as the German tax code offers tax concessions when being married. Since we employ monthly net income to measure economic success, the effect of being married is expected to be positive. We have also taken into account the impact of being from a particular sub-religious (Alevites and Sunnite) and ethnic background (Turks and Kurds) on integration and income as cultural differences among these groups may affect integration and economic success differently.[10] Unlike in Sunni or Shiite Islam, Alevites do not generally follow the Islamic Sharia Law and their religious practice is mainly based on humanistic and universal philosophical principles. This leads us to the proposition that their cultural distance to the host country might be smaller compared to other religious orientations and that they might be more motivated to integrate into the destination society. Similarly between the two dominant ethnic groups from Turkey (Kurdish and Turkish) Kurdish migrants might have higher incentive to integrate due to the less favorable political environment in Turkey.

Ethnic networks can play an important role in both integration and economic performance. Generally, they may have two opposing impacts: while joining the ethnic network potentially eases employment in the ethnic economy (including self-employment) it might hinder employment in the (potentially better paid) German labor market. The structure of ethnic networks suggests that individual household members can easily gain access to the networks of other household members. To further disentangle the focal point of the ethnic network, we distinguish among familial and *local ethnic networks* in Germany and

[9] See Tables 3a and 3b for the summary statistics of these key variables.
[10] Alevites comprise a higher share of immigrants to Germany compared to their population share in Turkey, mainly due to two reasons: first, Alevites come from settlement areas with higher share of emigrants during

transnational ethnic networks in Turkey. Having larger extended family in Germany reduces the extent of transnationality. As a result, we expect this to strongly foster economic success as it shifts the focal point of economic activities to Germany. Conversely, having strong transnational networks might lead to a lower level of economic success in Germany as it might shift the focal point of social and economic activities to Turkey. To take into account the unobservable district fixed effects on integration and income we have included district dummies in all of our econometric analyses.

3.3. Econometric Modeling

To estimate the determinants of integration and economic success of the Turkish migrants we first employ ordinary and ordered Probit and OLS estimations as baseline regressions and then conduct Seemingly Unrelated Regression (SUR) and Full Information Maximum Likelihood Regressions to take into account simultaneity between income and integration. To allow for varying degrees of associations between integration and economic success at different points of the income distribution, we also conduct a quantile regression analysis. We examine the determinants and the effects of four types of integration which include political, social, economic and full integration. Economic success is measured as the natural log of per adult equivalent household income, which is a commonly used measure of economic success in the literature.

We estimate the determinants of the three dimensions of integration for individual *i* which are measured by binary variables by applying the following reduced form Probit model:

$$I_i(\Pr = 1) = \alpha Y_i + \beta X_i + \varepsilon_i \qquad (1)$$

The dependent variables are the binary variables for political, social and economic integration which are proxied by German citizenship, having close German friends and having German boss or employee, respectively. The error ε is assumed to be normally distributed and orthogonal to all explanatory variables which comprise income Y as well as

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the *Gastarbeiter* programme; second many Alevites joined the political opposition in Turkey before the military coup and subsequently became Asylum seekers in Central Europe.

ethnic networks, individual demographic characteristics, and family context variables including transnational ties (all summed up in X). In this as in all applications that follow, standard errors are heteroscedasticity corrected and adjusted by district clustering. The latter seems reasonable since ethnic networks and labor market information have geographically low reach and thus may result in errors uncorrelated between districts but correlated among immigrants of the same district.

In addition to the above three binary integration variables, we also employ an integration index that covers all three types of integration. The index ranges from 0 to 3, which takes 0 for non integration, 1 for low integration, 2 for medium integration and 3 for high integration. As is standard in many empirical applications we employ an ordered probit model, the most appropriate technique for index variables (cp. Dustmann 1996).[11] The ordered probit model takes the following form:

$$I^* = X\beta + \varepsilon \tag{2}$$

where I^* is the unobserved level of *integration index*. We can only observe the score of our *integration index w* ranging between 0 and 3 and expressing different, ordinally sortable levels of integration. The ordered probit model makes use of "censoring" (Greene 2003: 736).

$$k_c = \begin{cases} 0 \Rightarrow NI & if \quad I^* \le \eta_1 \\ 1 \Rightarrow LI & if \quad \eta_1 < I^* \le \eta_2 \\ 2 \Rightarrow MI & if \quad \eta_2 < I^* \le \eta_3 \\ 3 \Rightarrow FI & if \quad \eta_3 < I^* \end{cases} \tag{3}$$

The unobserved thresholds are labeled η_c. *NI* (no integration), *LI* (low integration), *MI* (medium integration) and *FI* (full integration) are levels of integration. The index level w_c can be observed with the probability that the function ranges between two thresholds:

[11] As explained previously in the text, the *Integration* index takes the value 3 if the respondent has German citizenship, a German boss/employee and if the household has German friends; it takes value 2 if respondent satisfies only two, 1 if respondent satisfies only one of these three criteria, and takes 0 values if respondent does not have either of these criteria.

$$P(I_i = k_i) = P(\eta_{c-1} < F(X_i, \beta_i, \varepsilon) < \eta_c) \quad (4)$$

We first estimate the determinants of economic success with respect to integration variables, the ethnic networks and other control variables using standard baseline OLS. We then examine the interlinkages between income and integration by employing Seemingly Unrelated Regression (SUR) and Full Information Maximum Likelihood (FIML) techniques which recognize the potential simultaneity between income and integration equations and yield more robust results than OLS for both income and integration models. The baseline OLS model is of the following reduced form:

$$\ln Y_i = \alpha I_i + \beta X_i + \varepsilon_i \quad (5)$$

where X includes demographic, human capital and family information. Again, the error is assumed to be iid. To improve upon OLS results we have also employed SUR analysis which allows correlation across the error terms of income and integration equations, which in turn leads to more efficient estimators than OLS. However, SUR will result in biased estimators if there is an endogeneity between income and integration. Thus, to ensure the robustness of our findings, we have also employed FIML regression technique which takes into account the endogeneity and is appropriate for our analysis given that integration variables are binary and that there could be an endogenous switching regime between integrated and unintegrated groups. More specifically, immigrants belong to either an integrated or non-integrated group with the counterfactual state being unobserved. As we would be interested in differences of welfare determinants by integration status, we can estimate the switching regime with two-step least squares which, however, yields inconsistent and inefficient estimates. Maddala (1983) has proposed a methodology to solve the equation system simultaneously by FIML estimation. The base for the welfare regressions in both integration states is the "criterion function" according to which individuals are sorted into integrated and non-integrated groups of immigrants:

$$I_i = 1 \quad if \quad \delta X_i + u_i > 0$$
$$I_i = 0 \quad if \quad \delta X_i + u_i \leq 0$$

The error term u_i and the error terms of the two welfare regression equations (ε_{1i} and ε_{2i}) are assumed to have a trivariate normal distribution (Lokshin and Sajaia 2004).

Finally, in order to assess the association of income with integration and the networks at different levels of unobserved ability of immigrants, we conduct quantile regression analyses at different quantiles of the error distribution of the income equation. A simple approach to investigate whether integration has a stronger or weaker impact on income for less- or more-able immigrants (i.e. unobserved ability is interpreted as residual of the estimation) is to estimate a semi-parametric quantile regression model similar to equation (5) at the lower and upper quantiles of the error distribution. To do this we estimate the relationship conditioned on the explanatory variables $Q_\theta (Y_i | X_i)$ at different quantiles θ, instead of estimating the effect of the explanatory variables via OLS at the sample mean. The quantile procedure makes use of an algorithm minimizing absolute rather than squared deviations and is thus less sensitive to outliers (Koenker and Hallock 2001).

4. Empirical Analysis

This section is allocated to the econometric analysis of the determinants of integration and income and the interlinkages between these two variables. Before moving on to the multivariate results, we utilize the descriptive statistics to provide some information about the main features of integrated and unintegrated immigrants. As seen from Table 4, better-integrated persons are younger, female and not married. However, as the Figures 1a-b show, age and the time since migration do not exhibit a linear relationship with level of integration. The highest propensity to be integrated is given at an age slightly above 40 years but for persons older than 60 years integration levels fall sharply. The relationship between time spent in Germany and level of integration exhibits a bell shape with integration rising strongly after 15 years, peaking at 30 years and falling abruptly afterwards. The strange shape of this curve is due to the inclusion of immigrants born in Germany for which—different from the regressions—actual age is used as time spent in Germany.

Being born in Germany or having received an education degree is significantly more common among the better-integrated immigrants. Also, incomes (per capita and adult-equivalent incomes) and education levels are generally higher. Table 5a shows results for

the level of integration and densities of ethnic networks by income quintiles to account for potential welfare implications. Integration indicators are positively associated with income quantiles while local and inter-national networks are u-shaped in income. Table 5b reports integration and economic success indicators for first and second generation immigrants. Immigrants of the second generation perform significantly better only in the political and social sphere. Their economic integration is relatively disappointing and may be explained by their relatively weak educational success (Riphahn 2003).

4.1. Analysis of the Determinants of Integration

The analysis of the determinants of political, social, economic integration and the degree of integration has been carried out using Probit, Ordered Probit, Seemingly Unrelated Regression (SUR) and Full Information Maximum Likelihood (FIML) regression techniques. The findings of the baseline analysis of Probit are reported in Table 6. As seen from the table, education, age and being female are positive determinants of all four types of integration while the significant negative impact of squared age points to non-linearities between age and integration. Time spent in Germany and being born in Germany have a positive impact on all integration variables except for the social integration, and having German education has significant impact only on the degree of full integration. The weak impact of German schooling on integration confirms earlier findings from Dustmann (1996). Marital status, being from Turkish ethnic background, having siblings, parents or children in Turkey have no association with any of the integration variables, while being from Alevite sub-religious group is positively associated with political and social integration and negatively associated with economic integration. None of the network variables including the familial and local networks in Germany and transnational networks in Turkey are significant in any of the regressions, with the only exception that having local networks in Germany promotes social integration. Finally, size of household has a significant negative impact only on the degree of full integration, and income has a positive impact on political, economic and the degree of full integration while having no impact on social integration. While larger households provide less contact to the destination society, income seems to enable and stimulate integration.

As mentioned in detail earlier, in the presence of simultaneity between integration and income, Probit results will be biased and inefficient. Thus to check the robustness of the

Probit results, we have also carried out Seemingly Unrelated Regression (SUR) and the Full Information Maximum Likelihood (FIML) regression analyses of the integration variables. SUR will yield efficient estimators as, unlike Probit, it takes into account the error correlation between integration and income equations. However, the estimators of SUR will be biased if there is an endogeneity between income and integration, in which case FIML analysis will provide consistent and efficient estimators. The results of the SUR analysis of all four integration variables are reported in Table 9, columns 2, 4, 6, and 8. As seen from the table, the findings of the SUR analysis are very similar to those of Probit. The main differences in the SUR analysis is that education becomes insignificant in the political integration regression; age becomes insignificant in the economic integration regression, while family networks in Germany and having a spouse in Turkey become significant with a negative and positive sign respectively.

The findings of the endogenous switching regression model (FIML) which provide robust estimators in the presence of endogeneity are reported in the last columns of Tables 10, 11, and 12. As observed from these tables, time spent in Germany, being born in Germany, and being a female head of household are still positive and significant determinants of political integration, while their impact on social integration becomes insignificant. Similarly, years of education continue to be an important determinant of political and social integration, though its impact loses significance on economic integration. An important improvement upon the previous two analyses is that having German education becomes significant in both political and economic integration. Consistent with the Probit regression results, familial networks in Germany and transnational networks in Turkey have no significant impact on any form of integration, while local German networks are significant only in social integration with a positive sign. In addition, marital status, size of household, Turkish ethnic group, and having parents in Turkey are not significant in any of the regressions, and having siblings and children in Turkey are only significant in the political integration with positive and negative signs respectively.

Putting together the findings of Probit, SUR and FIML analyses we conclude that years of education and being female are the common determinants of all four forms of integration. The former finding is common to several studies for Germany (Dustmann 1996; Constant et al. 2006), while the latter further adds to the mixed results of this literature. Time spent in

Germany, being born in Germany, and having German education are all important determinants of all types of integration except for the social integration, which confirms the

importance of habituation to the host country (see Dustmann 1996). We interpret the age coefficients similarly: age has a strong non-linear relationship with political integration and the degree of full integration, and a weak non-linear relationship with social and economic integration. In terms of the relationship between networks and integration, the results show that neither transnational networks nor familial networks in Germany have any significant impact on any integration variables, while having strong Turkish networks in Germany have a positive impact on social integration only. This result indicates that people with wider ethnic networks also have more native friends suggesting that they have an unobservable characteristic of "sociality". In addition, all forms of integration are independent of marital status and being from a particular Turkish ethnic group, while only political integration is positively related to being from Alevite sub-religious group. We have expected this positive impact from being Alevite but can hardly disentangle whether Alevites tend to value integration comparatively high (pull for integration) or whether their past political isolation in Turkey has pushed them into integration (push for integration).

4.2. Impact of Integration on Economic Success

After assessing the determinants of integration, in this section we provide an in-depth analysis of the relationship between different forms of integration and income using OLS, SUR, FIML and quantile regression analyses. We measure economic success by the log transformation of per adult equivalent income, which has been commonly used in the literature as an objective metric of economic success. To have an understanding of the basic econometric modeling of income we first report the findings of the OLS analysis which excludes the integration variables, and then include further variables into the model in a stepwise fashion (Table 7). The first column of Table 7 reports the findings for the basic variables related to the socio-economic and demographic characteristics of the head of household. As seen from the column, years of education and marital status of the head of household are the only significant variables in the basic specification. None of the other variables including the time spent in Germany, being born and having education in Germany, gender and the ethnic and religious background of the head of household have a significant impact on income.

The second column of Table 7 reports the findings of the analysis that controls for the impact of household size and the number of working household members on income. Both

variables are significant with the expected signs. While a larger pool of working age adults increases the income generation potential of a household, the pure household size effect is negative as the number of dependents increases. With the inclusion of these variables into the analysis, being married becomes insignificant as the household size effect picks up the impact of marriage, and having German education and being female become significant with positive and negative coefficients respectively. In the last column we include familial and local networks in Germany and transnational networks in Turkey into the analysis. As the column shows, familial networks have a positive impact, transnational networks have a negative impact and local networks have no impact on income. In terms of the remaining variables of interest, we observe that years of education, having German education and being from Turkish ethnic background all have positive impact on income, while size of household and being female have a negative impact . These findings provide strong support for the studies dictating the positive effect of education and host country education (Chiswick and DebBurman 2004), and the negative impact of being female on income (Constant and Massey 2005; Buchel and Frick 2005). However, neither time spent in Germany nor being born in Germany have any significant impact on income of which the former finding is in contrast with international studies such as Duleep and Regets (1997) and Constant and Massey (2005). We suggest that the difference stems from our choice of the dependent variable, since studies using income rather than wages find less or no impact of years since migration (cp. Buchel and Frick 2005).

Having assessed the key variables of income, in Table 8 we report the findings of the OLS analysis that includes political, social, economic and full integration into the model. The first observation is that out of the four integration variables only political integration and the degree of full integration are significant with a positive sign (though the latter is significant only marginally). The findings for the remaining variables are very similar to those reported in Table 7. Specifically, the key variables such as years of education and having larger familial networks in Germany are positively associated with income, while transnational networks are negatively associated. In addition, being a female head of household, having a larger household and being from the Alevite sub-religious group all have a negative effect on income, while being from a Turkish ethnic group has a positive effect. Time spent in Germany and being born in Germany are not significant in any of the regressions.

Although the findings of OLS reported above provide support for the theoretical and empirical body of work with regards to the impact of integration, education and networks on

income, OLS will yield biased and inefficient estimators if integration and income are determined together. To address this issue we have also conducted SUR and FIML analyses. The findings of the SUR analysis of income, which provides more efficient estimators than OLS, are reported in the first, third, fifth and the final columns of Table 9. The only difference in the SUR analysis is that it improves the significance level of political integration and the degree of integration.[12] The findings for all the remaining variables are similar to those obtained in the OLS analysis.

To further assess the robustness of our findings we have also carried out FIML regression analysis, which not only improves the efficiency of the estimators but also yields unbiased coefficients in the presence of endogeneity. Tables 10, 11, and 12 report the findings that assess the impact of political, social and economic integration on income.[13] The first column of each table reports the findings for the "unintegrated" group and the second column reports the findings for the "integrated" group. In all tables, *rho0* indicates the correlation between the error term from the income equation of the unintegrated group and the error term from the criterion function, while *rho1* shows the correlation between the error from the income equation of the integrated group and the criterion function. Thus the value and sign of *rho*s are of special interest as they provide information on the interdependence of integration on income.

Table 10 shows the results of the FIML analysis of the impact of political integration on income. As seen at the end of Table 10, *rho0* is negative and significant while *rho1* is positive and significant, implying that unobservable characteristics of those migrants who are politically integrated are positively correlated with income (e.g. ability). In other words, an integrated immigrant earns more than a randomly chosen immigrant from the sample. Regarding the impact of other variables on income within politically integrated and unintegrated groups, the table shows that the years of education promotes income in both groups, though the magnitude of this impact is three times higher in the integrated group. Interestingly, only in the latter group, having German education yields an income premium and age has a non-linear impact on income. Another interesting finding is that the impact of familial networks is significant only in the unintegrated group, suggesting that they might be a substitute for integration in promoting income. The control variables such as size of

[12] That the degree of full integration promotes economic success is consistent with the findings of Ulku (2008) who uses the same data and finds that the degree of integration increases the amount of savings of the Turkish migrants in Berlin.

[13] We have not included the degree of full integration into our FIML model as it requires the selection variable (i.e. integration) to be binary.

household and the number of working household members are significant in both groups with expected signs.

The findings of the analysis for social integration are reported in Table 11. As the table shows, *rho0* is significant with a negative sign while *rho1* is insignificant, suggesting that socially unintegrated migrants earn less than a randomly chosen migrant from the sample while a migrant from the socially integrated group earns about the same as those. Different from the political integration results, here years of education promotes income only for the socially unintegrated group while having German education does not have an impact on either groups' income. In terms of the impact of networks on income, having larger familial networks in Germany promotes income only for the socially unintegrated while having transnational networks reduces the income for both groups. Moreover, being a female head of household leads to lower income only in the socially unintegrated group, and there is an income premium for being Turk and Alevite in the integrated group.

Finally Table 12 presents the findings of the impact of economic integration on income. As observed from the values of *rhos*, unobservables of both integrated and unintegrated groups are negatively correlated to income, though the unintegrated group is more disadvantaged as evidenced by the larger negative value of *rho0*. The underlying unobservable factor might be associated with the discrimination of immigrants in the labor market. Another explanation might be found in specific job affiliations with German employers, such as low-skilled and low-paid manual work. Years of education, age, and age squared are significant only in the integrated group with expected signs. Consistent with the findings of the other two integration variables, having familial networks promotes income only for the unintegrated group. However, this time in addition to the familial networks, having local networks also has a positive impact on income in the unintegrated group, while having transnational networks has a negative impact. In addition, similar to the findings in social integration, the female heads of households earn less in the economically unintegrated group.

The key findings of the FIML regression analysis can be summarized as follows. Objective integration (i.e. measured using an objective criterion) has a positive impact on income and thus complements findings on subjective integration by Dustmann (1996); years of education promotes income though more so in the integrated group which confirms findings reported in Zimmermann (2007) that the adaptation to the destination country matters for economic success; age has a positive non-linear impact on income only in economically and politically

integrated groups, and thus reinforces the fact that standard human capital factors play a stronger role for integrated immigrants; women have income disadvantages in socially and economically unintegrated groups; the familial network in Germany is an important determinant of income in all three types of unintegrated groups, and transnational networks either have negative or no impact on income; while the family seems like a substitute for integration, transnationality especially hinders the well-integrated; being from a Turkish ethnic background leads to higher income in all three forms of integrated groups, while being from the Alevite sub-religious group leads to lower income in unintegrated groups.

To gain an understanding of how integration and networks affect income at the different levels of income quantile, we have also reported in Figures 2 and 3 the impact of integration and network variables on income from the quantile regressions. As seen from Figure 2, which reports the impact of political, social and economic integration on income, political integration is a significant positive determinant of income only in the third quarter of the error distribution (increasing income by around 10 percent). At the very top of the distribution the positive impact is again significant and substantially larger (13 percent). However, due to the small sample size the estimation at the far right of the distribution becomes highly imprecise. This suggests that economically more able persons receive an integration premium while less able cannot significantly gain from integration. As the figures show, the impact of social and economic integration is statistically not different from zero at any point of the error distribution.

Figure 3 reports the impact of different forms of networks on income using quantile regressions. The effect of family networks in Germany on income exhibits a u-shaped pattern. Only at the bottom of the error distribution, the effect is highly significant with an estimated income return of an additional family member of half a percent. Having the family network increased by 10 persons thus contributes to individual income by a substantial five percent. On the top of the distribution (around the 80^{th} percentile) there is also a weakly significant positive effect of family networks. These results suggest that the family is a security net for the less well-endowed immigrants but may also help the better off, most probably through job and business networks.

Transnational ethnic networks have a negative return for income generation with an increasingly negative effect over the distribution of unobservables. In all three equations, the effect becomes significant in the third quarter of the distribution at around minus one percent for an additional friend in Turkey. Thus, while transnational ethnic networks worsen

income generation of immigrants in Germany (we cannot find any evidence for transnational income generation) the effect is statistically different from zero for the better but not for the best-endowed immigrant population.

The impact of local ethnic networks on income generation, on the other hand, is characterized by an inverted u-shape. The effect is consistently significant only in the second quarter of the distribution with a premium of around 1.5 percent for every additional Turkish friend in Germany. Taken together with the results from the family networks, we can conclude that local networks (of family members or friends) mainly serve those less endowed, while integration has a much less pronounced positive effect for income generation. Further, the latter effect comes only into effect in the upper percentiles of the error term distribution.

Taking together the above results we reach the following conclusions. While the pay-offs from integration are higher for households in the higher quintiles of unobserved ability, pay-offs from ethnic networks and familial linkages in Germany are significant only in lower parts of the distribution. This provides support for our idea stressing the potential trade-off between integration and ethnic network maintenance. In particular, the results offer evidence that integration might be costly for lower income households who then decide to increase their economic outcome by staying in local networks, while higher income households have incentives to reap the benefits from the integration premium. These results may shed some empirical light on the theoretical ambiguity of whether integration helps or hampers economic success. Transnational Turkish networks on the other hand lower the economic success of the households predominantly at medium and upper levels of the ability distribution. We take this as an indication that preserving strong transnational ties is accompanied by lower economic effort in Germany. As noted earlier this can be explained by the costs of maintaining the transnational network (as an example one could consider that making visits to Turkey reduces labor supply). Finally, being married and owning business in Germany increase income at all parts of the distribution, though the benefits from marriage are especially high at the lower part of the distribution.

5. Conclusion and Policy Implication

Our analysis offers a couple of important insights for the scientific debate on the interlinkages between integration, networks and economic success of immigrants and in their policy implications. First, education turns out to be the key determinant of both integration and economic success. Education raises the chances to become integrated into the host country purely by opening up a wider array of options and enabling people to efficiently collect and process information. Education may also increase the openness and adaptability to a new surrounding, thus easing and fostering the access of immigrants to further education opportunities, and to social, economic and political participation. Additionally, higher education not only leads to higher returns on the labor market but also increases the mobility of labor and decreases the volatility of future income streams, resulting in higher and stable incomes and relaxing the welfare constraints on integration. Our results indicate that education in combination with integration can significantly improve the welfare position of immigrants.

Second, our results provide evidence that deeper integration leads to higher levels of economic success. However, with regards to the separate impacts of political, social and economic integration on economic success, only political integration measured by 'holding German citizenship' had a significant impact on the income levels of Turkish immigrants. Only when we combine all three integration indicators which allow us to assess the impact of the higher degree of integration on income, are we able to obtain a consistently significant relationship between income and the degree of integration. This in fact might suggest that in order to have significant economic success brought about by integration, some combination of all three forms of integration might be necessary. Thus the policies aiming at integration might need to focus on all three forms of integration if the aim is to aid migrants' economic well-being.

Third, the integration and network channel of income generation differs across different levels of unobserved ability. While integration helps the better-endowed, the integration premium for less-able immigrants is zero. Local ethnic networks work like an insurance scheme for the latter. A state fostering integration has to sharply increase economic incentives for migrants. Investments into education and real access to promising labor market spheres require a straight political strategy and enduring efforts.

Fourth, local familial networks foster economic success indicating that ethnic niches may be economically advantageous and may partly substitute for missing integration. This result

confirms our idea that people prefer integration only if economic incentives exist. In support of migrant self-organization, the state could better make use of migrant initiatives, local knowledge and coverage. To succeed with a serious integration policy, an open policy dialogue as initiated by the 2006 integration summit is a prerequisite rather than a final solution.

Table 1. Distribution of the Turkish Residents in Berlin and the Turkish Households Included in the Data

	Total Residents	Total Foreigners	Turkish Residents	Turkish Residents % of Total Foreign Residents	Turkish Residents % of Total Residents	Number of Households in the Database
Berlin total	3,328,291	444,027	120,684	27.18%	3.63%	589
Kreuzberg	250,184	57,635	23,535	9.41%	40.83%	106
Mitte	315,205	86,108	30,153	9.57%	35.02%	145
Neukoelln	301,953	66,069	26,451	40.04%	8.76%	143
Tempelhof/Schoeneberg	329,450	50,801	13,707	26.98%	4.16%	70
Spandau	217,821	22,789	7,258	31.85%	3.33%	30
Reinickendorf	246,607	22,998	6,370	27.70%	2.58%	46
Charlottenburg/Wilmersdorf	217,821	55,337	7,344	13.27%	2.38%	33
Steglitz/Zehlendorf	284,972	28,618	3,409	11.91%	1.20%	17

Note: In Mitte proportional sampling is carried out within Tiergarten, Wedding, and Moabit, which include 15, 100 and 30 households respectively. In the analysis the more affluent districts which are mainly located in West Berlin are referred to as West. These districts are: Tempelhof/Schoeneberg, Spandau, Reinickendorf, Charlottenburg/Wilmersdorf and Steglitz/Zehlendorf. Source: Statistical Office Berlin (2003)

Table 2. Expected Signs of Theoretical Variables

Category	Variables	outcome variables	
		Integration	Economic Success
Demographic	Female	o	+/-
	Age	+	+
	Age squared	-	-
	Married	o	+
Human capital	Years of schooling	+	+
	Education in Germany	+	+
Exposure to host country	Time spent in Germany	+	+
	Born in Germany	+/-	+
Control Variables	Household size	-	+/-
	Number of working household members	o	+
Networks	Familial: number of family members in Germany	+/-	+
	Local: number of close Turkish friends in Germany	+/-	+
	Transnational: number of close Turkish friends in Turkey	-	-
Links to Turkey	Siblings in Turkey	-	o
	Parents in Turkey	-	o
	Spouse in Turkey	-	o
	Children in Turkey	-	o
Culture	Turk	+/-	+/-
	Alevite	+	+/-

Table 3a. Frequency Tables of Binary Variables

	N	% in total respondents
German Citizenship	590	39.66
Close German Friends	590	18.31
German Boss	590	33.22
German Employees	590	3.73
German Education	590	47.29
Female Head of HH	590	15.25
Own House in Germany	590	9.83
Fixed Assets in Turkey	590	58.47
Born in Germany	590	16.10
Married	590	72.37
Return Plans	590	42.71
Full Time Employed	590	35.76
Own Business	590	11.36
Unemployed	590	18.64
Turkish Ethnic Origin	590	78.81
Alevite	590	25.25
Rural Origin	590	7.12
Kreuzberg	590	17.97
Neukoelln	590	24.24
Mitte	590	24.58
West	590	33.22

Source: Ulku (2007); authors' calculations.

Table 3b. Summary Statistics for the Full Sample

Variable	N	min	max	mean	p50	Sd
Income	590	500	7000	1856.36	1750.0	1033.04
Age	590	21	81	41.95	40.0	12.22
Years of Education	590	0	18	10.87	10.0	3.81
Time Spent in Germany	588	0.3	43	25.20	28.0	10.52
Number of Close Turkish Friends in Germany	581	0	100	4.47	3.0	7.11
Number of Close Turkish Friends in Turkey	579	0	100	1.98	0.0	5.46
Number of Household Members	590	1	12	3.25	3.0	1.62
Number of Working Household Members	590	0	7	1.16	1.0	0.87
Number of Family Members in Germany	590	0	106	11.52	9.0	11.85
Number of Close Family Members in Turkey	588	0	18	2.83	2.0	2.75
Children/Spouse in Turkey	588	0	9	0.20	0.0	0.88
Number of Foreigners in the Family	589	0	6	0.33	0.0	0.76
Frequency of Visits to Turkey	587	0	17	10.09	11.0	2.31
Integration Index	582	0	3	0.98	1.0	0.88

Source: Ulku (2007); authors' calculations.

Table 4. Means and Frequencies of Main Variables by the Degree of Integration

	Fully Integrated	Non-Integrated
Variable	Mean	Mean
Income	2213.2	1597.3
Per Capita Income	982.1	633.9
Income Per Adult Equivalent (Oxford Scale)	1193.8	786.9
Age	39.4	42.9
Years of Education	13.9	10.0
Time Spent in Germany	29.2	22.8
Number of Close Turkish Friends in Germany	4.5	4.1
Number of Close Turkish Friends in Turkey	1.4	1.7
	% in Fully Integrated Frequency	% in Non-Integrated Frequency
Male	52.9	77.5
German Education	85.3	30.7
Born in Germany	38.2	7.0
Married	61.8	76.0
Return Plans	14.7	44.0
Turk	76.5	83.0
Alevite	32.4	20.5

Fully Integrated: If the respondent has all of these: German citizenship, close German friends, German boss/German employee.
Non-Integrated: If the respondent does not have any of the above.
Note: Total numbers of observations of fully integrated are 34 while non-integrated are 200.
Source: Ulku (2007); authors' calculations.

Table 5a. Integration and Ethnic Networks by Income Quantile

	German Citizenship	Close German Friends	Having German Boss/Employee	Close Turkish Friends in Germany	Close Turkish Friends in Turkey	Family Network
Quantile 1	33.9%	14.8%	30.4%	4.7	2.0	12.2
Quantile 2	30.1%	17.1%	35.8%	4.3	1.7	11.0
Quantile 3	40.7%	17.9%	39.0%	4.3	1.7	11.7
Quantile 4	46.0%	22.1%	40.7%	4.0	2.4	9.4
Quantile 5	51.0%	21.6%	39.2%	5.0	2.2	13.2
Total	39.9%	18.6%	37.0%	4.4	2.0	11.5

Source: Ulku (2007); authors' calculations.

Table 5b. Integration and Ethnic Networks by Immigrant Generation

	German Citizenship	Close German Friends	Having German Boss/Employee	Close Turkish Friends in Germany	Close Turkish Friends in Turkey	Family Network
First Generation	34.8%	16.4%	36.2%	4.5	2.0	10.6
Second Generation	66.7%	30.1%	40.9%	4.1	1.8	16.1

Note: First generation immigrants are born outside Germany and live in Germany at least for 25 years, second generation immigrants are born in Germany. Source: Ulku (2007); authors' calculations.

Table 6. Probit Regressions of Binary Integration Indices

	(1)	(2)	(3)	(4)
	Social integration	Political integration	Economic Integration	Integration Index
Income log, AE	0.005	0.130	0.130	0.336
	(0.14)	(2.20)**	(2.20)**	(2.79)***
Time in Germany	-0.002	0.011	0.011	0.010
	(0.71)	(2.52)**	(2.52)**	(1.05)
Born in Germany	0.027	0.555	0.555	0.826
	(0.29)	(6.02)***	(6.02)***	(2.93)***
Education in Germ.	0.048	0.094	0.094	0.424
	(1.00)	(1.29)	(1.29)	(2.69)***
Yrs of education	0.010	0.015	0.015	0.041
	(1.90)*	(1.79)*	(1.79)*	(2.28)**
Age	0.040	0.051	0.051	0.145
	(2.73)***	(2.97)***	(2.97)***	(4.03)***
Age squared	-0.000	-0.001	-0.001	-0.001
	(2.49)**	(3.09)***	(3.09)***	(3.79)***
Female	0.082	0.140	0.140	0.492
	(1.65)*	(2.04)**	(2.04)**	(3.34)***
Married	-0.062	-0.054	-0.054	-0.078
	(1.27)	(0.75)	(0.75)	(0.52)
Alevite	-0.063	0.146	0.146	0.123
	(1.91)*	(2.54)**	(2.54)**	(1.00)
Turk	-0.008	-0.076	-0.076	-0.121
	(0.20)	(1.16)	(1.16)	(0.86)
Family network	-0.002	-0.000	-0.000	0.001
	(1.21)	(0.04)	(0.04)	(0.28)
Local ethnic network	0.014	-0.006	-0.006	-0.000
	(2.98)***	(0.75)	(0.75)	(0.03)
Trans-national ethnic network	0.003	-0.006	-0.006	0.001
	(0.62)	(0.79)	(0.79)	(0.07)
Household size	-0.005	0.035	0.035	0.092
	(0.39)	(1.59)	(1.59)	(2.27)**
Siblings in Turkey	-0.005	0.020	0.020	0.006
	(0.54)	(1.44)	(1.44)	(0.23)
Children in Turkey	-0.042	-0.052	-0.052	-0.105
	(1.12)	(1.24)	(1.24)	(1.56)
Parents in Turkey	-0.006	-0.011	-0.011	0.072
	(0.24)	(0.30)	(0.30)	(0.90)
Spouse in Turkey		0.047	0.047	0.490
		(0.18)	(0.18)	(1.40)
Observations	456	464	464	464

Absolute value of z statistics in parentheses * significant at 10%; ** significant at 5%; *** significant at 1%
Note: AE refers to adult equivalent.

Table 7. OLS Regression of Income (log) without Integration Variables

	(1)	(2)	(3)
	Baseline	Extension 1	Extension 2
Time in Germany	0.002	0.005	0.003
	(0.60)	(1.63)	(1.19)
Born in Germany	0.084	0.109	0.063
	(0.84)	(1.26)	(0.76)
Education in Germ.	0.088	0.105	0.085
	(1.40)	(1.97)**	(1.60)
Yrs of education	0.032	0.022	0.022
	(4.68)***	(4.12)***	(4.11)***
Age	0.001	0.014	0.016
	(0.07)	(1.26)	(1.34)
Age squared	-0.000	-0.000	-0.000
	(0.17)	(1.44)	(1.40)
Female	-0.086	-0.104	-0.096
	(1.46)	(2.05)**	(1.89)*
Married	-0.209	-0.002	-0.004
	(3.66)***	(0.05)	(0.08)
Alevite	0.028	-0.039	-0.067
	(0.61)	(0.98)	(1.75)*
Turk	0.031	0.070	0.113
	(0.55)	(1.41)	(2.43)**
Household size		-0.164	-0.168
		(11.98)***	(12.17)***
Number of working HH members		0.232	0.238
		(7.57)***	(7.69)***
Family network			0.003
			(1.93)*
Local ethnic network			0.008
			(1.39)
Trans-national ethnic network			-0.010
			(2.03)**
Observations	484	484	466
R-squared	0.15	0.38	0.41

Robust t statistics in parentheses * significant at 10%; ** significant at 5%; *** significant at 1%
Note: income refers to per adult equivalent income.

Table 8. OLS Regression of Income (log)

	(1)	(2)	(3)	(4)
Social Integration	0.018			
	(0.37)			
Political Integration		0.086		
		(1.98)**		
Economic integration			-0.008	
			(0.19)	
Integration index				0.038
				(1.61)†
Time in Germany	0.003	0.002	0.003	0.003
	(1.20)	(0.86)	(1.18)	(1.11)
Born in Germany	0.063	0.020	0.065	0.044
	(0.75)	(0.22)	(0.77)	(0.52)
Education in Germ.	0.084	0.078	0.086	0.074
	(1.57)	(1.49)	(1.62)	(1.40)
Yrs of education	0.022	0.021	0.022	0.021
	(4.02)***	(3.77)***	(4.11)***	(3.77)***
Age	0.015	0.012	0.016	0.012
	(1.25)	(1.05)	(1.35)	(1.01)
Age squared	-0.000	-0.000	-0.000	-0.000
	(1.32)	(1.10)	(1.41)	(1.09)
Female	-0.097	-0.106	-0.095	-0.108
	(1.91)*	(2.06)**	(1.87)*	(2.09)**
Married	-0.003	-0.001	-0.004	-0.002
	(0.06)	(0.02)	(0.07)	(0.04)
Alevite	-0.066	-0.078	-0.067	-0.068
	(1.71)*	(2.00)**	(1.75)*	(1.80)*
Turk	0.113	0.117	0.113	0.114
	(2.42)**	(2.49)**	(2.43)**	(2.42)**
Household size	-0.168	-0.169	-0.168	-0.168
	(12.14)***	(12.41)***	(12.09)***	(12.23)***
Number of working HH members	0.238	0.235	0.238	0.232
	(7.67)***	(7.78)***	(7.66)***	(7.43)***
Family network	0.003	0.003	0.003	0.003
	(1.95)*	(1.92)*	(1.93)*	(1.89)*
Local ethnic network	0.007	0.008	0.007	0.007
	(1.32)	(1.43)	(1.36)	(1.35)
Trans-national ethnic network	-0.010	-0.010	-0.010	-0.010
	(2.04)**	(1.86)*	(2.00)**	(1.99)**
Constant	6.135	6.212	6.119	6.209
	(22.00)***	(22.61)***	(22.55)***	(22.08)***
Observations	466	466	466	466
R-squared	0.41	0.41	0.41	0.41

Robust t statistics in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%; † significant at 0.11%.
Note: income refers to per adult equivalent (AE) income.

Table 9. SUR Regression of Income (log) using Individual Integration Indices

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Income	Political integration	Income	Economic integration	Income	Social integration	Income	Integration index
Social Integration	0.169							
	(4.32)***							
Political Integration			0.035					
			(0.90)					
Economic integration					0.034			
					(0.69)			
Integration index							0.095	
							(4.26)***	
Income (log), AE		0.209		0.102		0.028		0.444
		(4.26)***		(2.01)**		(0.69)		(5.13)***
Time in Germany	0.002	0.009	0.003	0.010	0.003	-0.004	0.003	0.005
	(0.57)	(2.54)**	(1.03)	(2.49)**	(1.17)	(1.28)	(0.99)	(0.73)
Born in Germany	-0.019	0.514	0.060	0.240	0.066	-0.008	0.019	0.538
	(0.22)	(4.62)***	(0.69)	(2.09)**	(0.77)	(0.09)	(0.22)	(2.73)***
Education in Germ.	0.072	0.072	0.082	0.061	0.082	0.069	0.056	0.281
	(1.40)	(1.16)	(1.59)	(0.96)	(1.59)	(1.39)	(1.08)	(2.58)***
Yrs of education	0.020	0.010	0.022	0.013	0.022	0.010	0.019	0.024
	(3.53)***	(1.54)	(3.92)***	(1.82)*	(3.94)***	(1.85)*	(3.41)***	(1.97)**
Age	0.010	0.037	0.016	0.019	0.016	0.034	0.007	0.093
	(0.85)	(2.75)***	(1.38)	(1.36)	(1.34)	(3.15)***	(0.62)	(3.93)***
Age squared	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.001
	(0.91)	(2.89)***	(1.46)	(1.68)*	(1.44)	(2.96)***	(0.76)	(3.65)***
Female	-0.111	0.127	-0.096	0.109	-0.095	0.090	-0.123	0.365
	(2.23)**	(2.19)**	(1.92)*	(1.83)*	(1.90)*	(1.93)*	(2.46)**	(3.57)***
Married	0.008	-0.046	-0.003	0.068	0.003	-0.064	0.005	-0.052
	(0.15)	(0.77)	(0.05)	(1.09)	(0.06)	(1.31)	(0.10)	(0.48)
Alevite	-0.085	0.131	-0.065	-0.002	-0.063	-0.064	-0.069	0.079
	(2.03)**	(2.70)***	(1.54)	(0.04)	(1.50)	(1.62)	(1.67)*	(0.92)
Turk	0.119	-0.074	0.110	0.003	0.111	-0.004	0.114	-0.104
	(2.62)***	(1.35)	(2.42)**	(0.05)	(2.44)**	(0.09)	(2.52)**	(1.08)
Household size	-0.170	0.042	-0.168	0.011	-0.168	-0.002	-0.170	0.087
	(12.06)***	(2.34)**	(11.87)***	(0.58)	(11.90)***	(0.13)	(12.02)***	(2.75)***
Number of working	0.230		0.236		0.237		0.224	
HH members	(10.03)***		(10.12)***		(10.23)***		(9.68)***	
Family network	0.003	-0.001	0.003	0.001	0.003	-0.002	0.003	-0.000
	(1.75)*	(0.31)	(1.73)*	(0.41)	(1.79)*	(1.38)	(1.69)*	(0.02)
Local ethnic network	0.008	-0.005	0.008	-0.011	0.007	0.015	0.007	0.001
	(1.49)	(0.80)	(1.43)	(1.68)*	(1.26)	(2.81)***	(1.30)	(0.10)
Trans-national ethnic	-0.009	-0.003	-0.010	0.006	-0.010	0.004	-0.009	-0.001
network	(1.68)*	(0.55)	(1.87)*	(0.87)	(1.86)*	(0.73)	(1.77)*	(0.09)
Siblings in Turkey		0.014		-0.014		-0.007		-0.001
		(1.21)		(1.12)		(0.74)		(0.04)
Children in Turkey		-0.028		-0.004		-0.009		-0.044
		(1.09)		(0.15)		(0.42)		(0.95)
Spouse in Turkey		0.046		0.306		-0.113		0.200
		(0.26)		(1.69)*		(0.79)		(0.64)
Parents in Turkey		-0.007		0.029		-0.010		0.048
		(0.21)		(0.88)		(0.39)		(0.85)
Observations	464	464	464	464	464	464	464	464

Absolute value of z statistics in parentheses * significant at 10%; ** significant at 5%; *** significant at 1%

Note: income refers to per adult equivalent (AE) income.

Table 10. FIML Estimation of Income (log) using Political Integration

	DV: Income		Political
	Unintegrated	Integrated	Integration
Time in Germany			0.022
			(2.26)**
Born in Germany	-0.119	0.177	1.353
	(1.22)	(1.47)	(4.12)***
Yrs of education	0.014	0.043	0.043
	(2.02)**	(4.11)***	(2.15)**
Education in Germ.	0.029	0.196	0.416
	(0.46)	(2.05)**	(2.29)**
Age	0.001	0.073	0.146
	(0.05)	(1.78)*	(3.08)***
Age squared	-0.000	-0.001	-0.002
	(0.11)	(1.64)	(3.03)***
Female	-0.098	-0.026	0.309
	(1.37)	(0.28)	(1.85)*
Married	0.070	-0.076	-0.146
	(1.14)	(0.79)	(0.83)
Alevite	-0.140	0.127	0.329
	(2.69)***	(1.52)	(2.27)**
Turk	0.044	0.268	-0.161
	(0.66)	(3.02)***	(0.95)
Household size	-0.180	-0.157	0.036
	(9.82)***	(5.92)***	(0.68)
Family network	0.003	0.003	0.001
	(1.67)*	(0.75)	(0.23)
Local ethnic network	0.008	0.013	-0.014
	(1.21)	(1.35)	(0.79)
Trans-national ethnic network	-0.005	-0.017	-0.015
	(1.04)	(1.56)	(0.86)
Number of working HH members	0.198	0.263	
	(5.25)***	(6.10)***	
Siblings in Turkey			0.074
			(2.44)**
Children in Turkey			-0.233
			(2.60)***
Spouse in Turkey			0.132
			(0.29)
Parents in Tukrey			-0.023
			(0.31)

Rho0: -0.63** (se: 0.21)
Rho1: 0.85*** (se: 0.10)
Wald test of independence, Chi square: 14.37 (p=0.000)
Observations: 464
Robust z statistics in parentheses * significant at 10%; ** significant at 5%; *** significant at 1%
Note: Time in Germany was removed from the income equation as the model did not converge when it is included in the regression.
Note: Income refers to per adult equivalent (AE) income

Table 11. FIML Estimation of Income (log) using Social Integration

	DV: Income		DV: Social
	Unintegrated	Integrated	Integration
Time in Germany	0.004	0.007	0.000
	(1.01)	(0.99)	(0.03)
Born in Germany	0.066	-0.192	0.330
	(0.64)	(0.78)	(0.95)
Yrs of education	0.012	0.025	0.059
	(1.74)*	(1.48)	(2.54)**
Education in Germ.	0.059	-0.023	0.348
	(0.90)	(0.13)	(1.43)
Age	-0.005	-0.001	0.134
	(0.34)	(0.01)	(1.56)
Age squared	0.000	-0.000	-0.001
	(0.26)	(0.02)	(1.54)
Female	-0.141	-0.121	0.293
	(2.14)**	(0.98)	(1.57)
Married	0.078	-0.017	-0.195
	(1.25)	(0.14)	(0.91)
Alevite	-0.065	0.305	-0.278
	(1.44)	(2.61)***	(1.62)
Turk	0.082	0.243	0.017
	(1.43)	(2.47)**	(0.10)
Household size	-0.163	-0.201	-0.037
	(10.13)***	(5.48)***	(0.56)
Family network	0.005	0.002	-0.007
	(2.68)***	(0.52)	(1.15)
Local ethnic network	-0.003	0.000	0.062
	(0.37)	(0.01)	(3.50)***
Trans-national ethnic network	-0.013	-0.019	0.010
	(2.01)**	(1.67)*	(0.57)
Number of working HH members	0.251	0.163	--
	(7.42)***	(2.51)**	
Siblings in Turkey			-0.017
			(0.37)
Children in Turkey			-0.105
			(1.01)
Spouse in Turkey			-3.915
			(1.81)*
Parents in Turkey			0.101
			(0.95)

Rho0: -0.83*** (se: 0.18)
Rho1: -0.75 (se: 0.38)
Wald test of independence of equations: 4. 73 (0.09)
Observations: 464
Robust z statistics in parentheses * significant at 10%; ** significant at 5%; *** significant at 1%
Note: Income refers to per adult equivalent (AE) income

Table 12. FIML Estimation of Income (log) using Economic Integration

	DV: Income		DV: Economic
	Unintegrated	Integrated	Integration
Time in Germany	0.000	-0.002	0.029
	(0.00)	(0.34)	(2.63)***
Born in Germany	-0.095	0.043	0.775
	(0.80)	(0.26)	(2.46)**
Yrs of education	0.007	0.032	0.050
	(0.84)	(3.55)***	(2.51)**
Education in Germ.	0.058	0.033	0.248
	(0.81)	(0.36)	(1.37)
Age	-0.006	0.042	0.060
	(0.38)	(1.95)*	(1.36)
Age squared	0.000	-0.000	-0.001
	(0.36)	(1.93)*	(1.61)
Female	-0.135	-0.142	0.292
	(1.79)*	(1.57)	(1.72)*
Married	-0.057	-0.021	0.209
	(0.78)	(0.23)	(1.19)
Alevite	-0.110	0.059	0.012
	(2.08)**	(0.87)	(0.09)
Turk	0.014	0.243	0.057
	(0.22)	(3.22)***	(0.35)
Household size	-0.169	-0.147	0.012
	(9.28)***	(5.39)***	(0.24)
Family network	0.004	-0.001	0.003
	(2.06)**	(0.30)	(0.56)
Local ethnic network	0.012	0.009	-0.024
	(1.65)*	(0.80)	(1.35)
Trans-national ethnic network	-0.014	-0.009	0.008
	(2.01)**	(1.11)	(0.44)
Number of working HH members	0.245	0.197	
	(7.68)***	(2.98)***	
Siblings in Turkey			-0.040
			(1.24)
Children in Turkey			-0.006
			(0.08)
Spouse in Turkey			1.151
			(2.89)***
Parents in Turkey			0.145
			(1.63)

Rho0: -0.75*** (se: 0.19)
Rho1: -0.61*** (se: 0.21)
Wald test of independence of equations: chi square: 9.26 (p=0.01)
Observations: 464
Robust z statistics in parentheses * significant at 10%; ** significant at 5%; *** significant at 1%
Note: Income refers to per adult equivalent (AE) income.

Figure 1a: Predicted Integration by Age

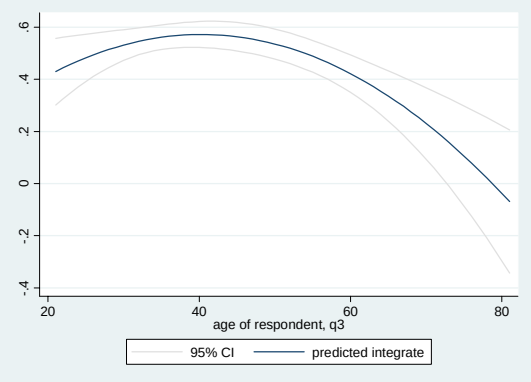
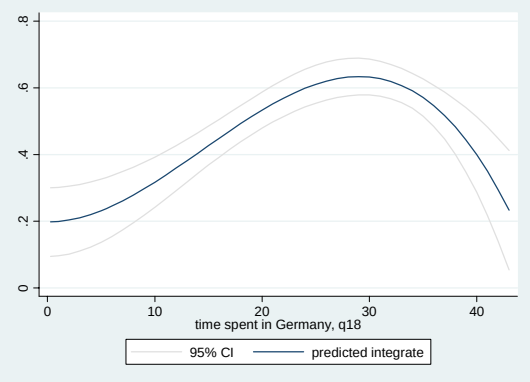
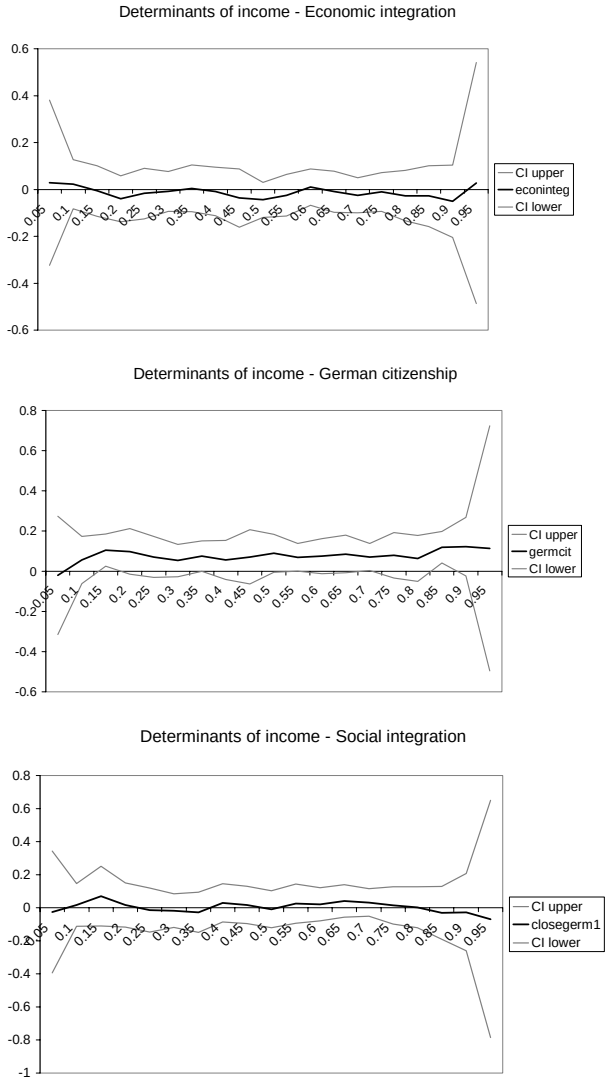


Figure 1b: Predicted Integration by TiG



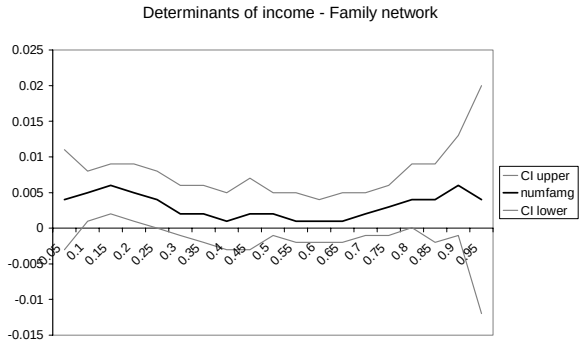
Note: The predictions for the level of integration are based on estimation of a fractional polynomial of age and time spent in Germany (TiG), respectively. Source: Ulku (2007); authors' calculations.

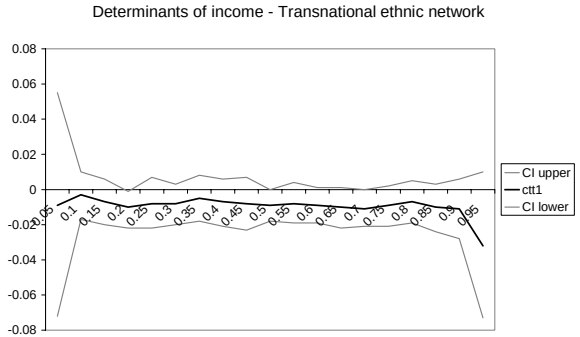
Figure 2: Integration coefficients from Quantile Regressions

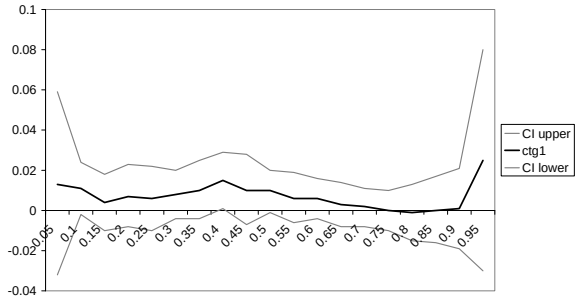


Figures 3: Impact of Networks on Income over Different Income Quantiles

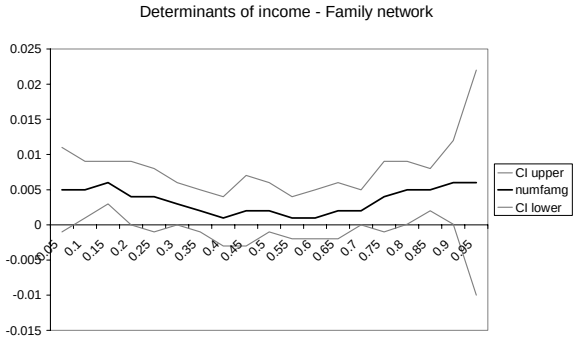
Economic integration equation

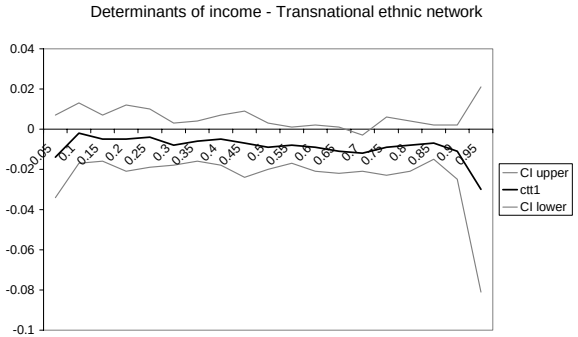


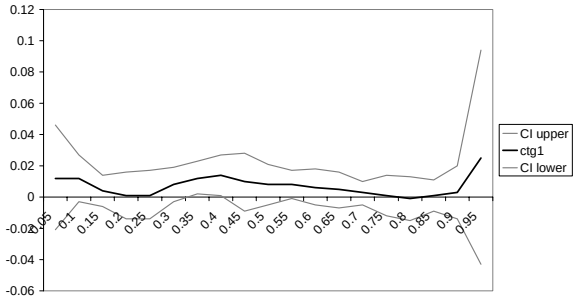




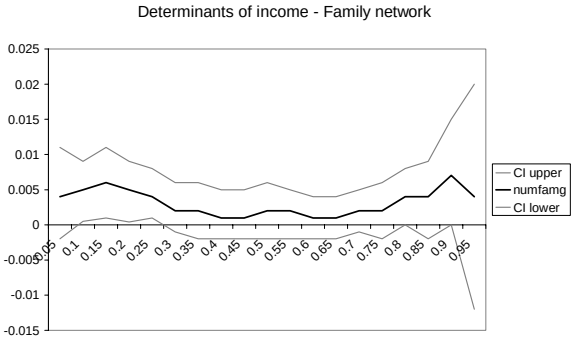
Political integration equation

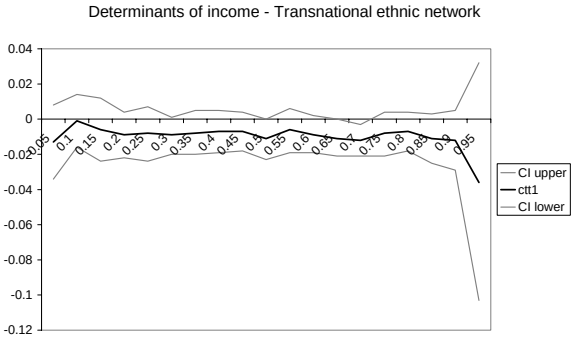


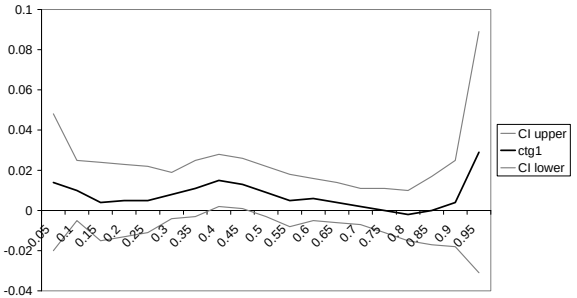




Social integration equation







References

Adsera, A. and B. R. Chiswick (2007). "Are there Gender and Country of Origin Differences in Immigrant Labor Market Outcomes across European Destinations?" Journal of Population Economics **20**(3): 495-526.

Alesina, A. and E. La Ferrara (2004). Ethnic Diversity and Economic Performance. NBER Working Paper Series No. 10313.

Bauer, T., G. S. Epstein and I. N. Gang (2005). "Enclaves, language, and the location choice of migrants." Journal of Population Economics **18**(4): 649-662.

Berger, M., C. Galonska and R. Koopmans (2004). „Political Integration by a Detour? Ethnic Communities and Social Capital of Migrants in Berlin." Journal of Ethnic and Migration Studies **30**(3): 491-507

Bertrand, M., E. F. P. Luttmer and S. Mullainathan (2000). "Network Effects and Welfare Cultures." Quarterly Journal of Economics **115**(3): 1019-1055.

Borjas, G. J. (1985): "Assimilation, Changes in Cohort Quality, and the Earnings of Immigrants." Journal of Labor Economics (3): 463-89

Borjas, G. J. (1994). "The Economics of Immigration." Journal of Economic Literature **32**(4): 1667-1717.

Borjas, G. J. (1995). "Ethnicity, Neighborhoods, and Human-Capital Externalities." American Economic Review **85**(3): 365-390.

Borjas, G. J. and B. Bratsberg (1996). „Who Leaves? The Outmigration of the Foreign Born." Review of Economics and Statistics **78**(1): 165-176

Borjas, G. J. and L. Hilton (1996). "Immigration and the Welfare State: Immigrant Participation in Means-Tested Entitlement Programs." Quarterly Journal of Economics **111**(2): 575-604.

Buchel, F. and J. R. Frick (2005). "Immigrants' Economic Performance across Europe - Does Immigration Policy Matter?" Population Research and Policy Review **24**(2): 175-212.

Calvo-Armengol, A. (2004). "Job Contact Networks." Journal of Economic Theory **115**(1): 191-206.

Cardak, B. A. and J. T. McDonald (2004). "Neighbourhood Effects, Preference Heterogeneity and Immigrant Educational Attainment." Applied Economics **36**(6): 559-572.

Chiswick, B. R. (1978). "The Effect of Americanization on the Earnings of Foreign-Born Men." Journal of Political Economy **86**(5): 897-921.

Chiswick, B. R and P. M. Miller (1996). "Ethnic Networks and Language Proficiency among Immigrants," Journal of Population Economics, **9**(1): 19-35.

Chiswick, B. R., Y. Cohen and T. Zach (1997). "The Labor Market Status of Immigrants: Effects of the Unemployment Rate at Arrival and Duration of Residence." Industrial & Labor Relations Review 50(2): 289-303.

Chiswick, B. R. and N. DebBurman (2004). "Educational Attainment: Analysis by Immigrant Generation." Economics of Education Review **23**(4): 361-379.

Coleman, J. (1990). Foundations of Social Theory. Cambridge MA, Harvard University Press.

Constant, A. and D. S. Massey (2002). "Return Migration by German Guestworkers: Neoclassical versus New Economic Theories." International Migration **40**(4): 5-38.

Constant, A. and D. S. Massey (2005). "Labor Market Segmentation and the Earnings of German Guestworkers." Population Research and Policy Review **24**(5): 489-512.

Constant, A. and K. F. Zimmermann (2006). "The Making of Entrepreneurs in Germany: Are Native Men and Immigrants Alike?" Small Business Economics **26**(3): 279-300.

Constant, A., L. Gataullina and K. F. Zimmermann (2006). Ethnosizing Immigrants. IZA Discussion Paper No. 2040. Bonn.
DeVoretz, D. J. (2008). "The Economics of Citizenship: A Common Intellectual Ground for Social Scientists?" Journal of Ethnic and Migration Studies **34** (4): 679-693.
Drever, A. I. (2004). Separate Spaces, Separate Outcomes? Neighbourhood Impacts on Minorities in Germany. *Urban Studies*, **41**, 1423–1439.
Duleep, H. O. and M. C. Regets (1997). "Measuring immigrant wage growth using matched CPS files." Demography **34**(2): 239-249.
Dustmann, C. (1996). "The Social Assimilation of Immigrants." Journal of Population Economics **9**(1): 37-54.
Espenshade, T. J. and H. S. Fu (1997). "An Analysis of English-Language Proficiency among US Immigrants." American Sociological Review **62**(2): 288-305.
Fong, E. and E. Ooka (2002). "The Social Consequences of Participating in the Ethnic Economy." International Migration Review **36**(1): 125-146.
Granovetter, M. S. (1995). Getting a Job: A Study of Contacts and Careers. Chicago, University of Chicago Press.
Greene, W. H. (2003). Econometric Analysis. 5th ed. Upper Saddle River, NJ, Prentice Hall.
Haug, S. (2003). “Interethnic Friendship Ties as an Indicator of Social Integration. An Empirical Investigation of Young Italian and Turkish Migrants in Germany.” Kölner Zeitschrift für Soziologie and Sozialpsychologie **55**(4):716-+
Koenker, R. and K. F. Hallock (2001). "Quantile Regression." Journal of Economic Perspectives **15**(4): 143-156.
Kogan, I. (2004). "Last Hired, First Fired? The Unemployment Dynamics of Male Immigrants in Germany." European Sociological Review **20**(5): 445-461.
Lazear, E. P. (1999). "Culture and Language." Journal of Political Economy **107**(6): 95-126
Lokshin, M. and Z. Sajaia (2004). "Maximum likelihood estimation of endogenous switching regression models." The Stata Journal **4**(3): 282–289.
Lorenz, E. (1999). "Trust, Contract and Economic Cooperation." Cambridge Journal of Economics **23**(3): 301-315.
Maddala, G. S. (1983). Limited-Dependent and Qualitative Variables in Econometrics. Cambridge, MA, Cambridge University Press.
Montgomery, J. D. (1991). "Social Networks and Labor-Market Outcomes: Toward an Economic Analysis." American Economic Review **81**(5): 1408-1418.
Munshi, K. (2003). "Networks in the Modern Economy: Mexican Migrants in the US Labor Market." Quarterly Journal of Economics **118**(2): 549-599.
OECD (2007a). PISA 2006. Science Competencies for Tomorrow’s World. Volume 1, Analysis. Paris, OECD.
OECD (2007b). The Labour Market Integration of Immigrants in Germany. Paris, OECD. Volume 2007: 250-328(79).
Piore, M. (1979). Birds of Passage. Cambridge MA, Cambridge University Press.
Putnam, R. D. (2000). Bowling Alone. The Collapse and Revival of American Community. New York, Simon and Schuster.
Riphahn, R. T. (2003). "Cohort Effects in the Educational Attainment of Second Generation Immigrants in Germany: An Analysis of Census Data." Journal of Population Economics **16**(4): 711-737.
Schönwälder, K. and J. Söhn (2007). Siedlungsstrukturen von Migrantengruppen in Deutschland: Schwerpunkte der Ansiedlung und innerstädtische Konzentrationen. WZB Discussion Paper SP IV 2007-601. Berlin.

SPIEGEL online (2007). Can Merkel's Integration Summit Deliver More than Just Promises? URL: http://www.spiegel.de/international/germany/0,1518,493407,00.html | Access Date 18 Feb 2008.

Statistical Office Berlin (2003). Residents of Berlin by Nationality. Berlin.

Tillie, J. (2004). "Social Capital of Organisations and their Members: Explaining the Political Integration of Immigrants in Amsterdam." Journal of Ethnic and Migration Studies **30**(3): 529-541

Topa, G. (2001). "Social Interactions, Local Spillovers and Unemployment." Review of Economic Studies **68**(2): 261-295.

Ulku, H. (2008). "Remitting and Saving Behaviour of International Migrants: Evidence from Turkish Households in Germany" Brookings World Poverty Institute (BWPI) Working Paper No. **47**, University of Manchester.

Ulku, H. (2007). Data set 'Socio-Economic Data on Turkish Households in Berlin'. University of Manchester (Unpublished Data).

von Loeffelholz, H. D. (2001). "Kosten der Nichtintegration ausländischer Zuwanderer." Beihefte der Konjunkturpolitik Heft 52, Migration in Europa: 191-212.

Yang, P. Q. (1994). "Explaining Immigrant Naturalization." International Migration Review **28**(3): 449-477.

Zimmermann, K. F. (1996). "European Migration: Push and Pull." International Regional Science Review **19**(1-2): 95-128.

Zimmermann, K. F. (2007). "The Economics of Migrant Ethnicity." Journal of Population Economics **20**(3): 487-494.