ABSTRACT

In this study, we investigate the impact of immigration in the context of a developing country, Turkey. We start with an investigation of the impact of immigration on the employment outcome of natives. We use Borjas' skill-cell approach to consider skill-specific labour supply shocks to identify the impact of immigration. To correct for potential endogeneity arising from the non-random location choice of immigrants, we also apply an IV analysis in which the instrument is a la Card historical pattern of immigrants from a given country of birth. Findings show that employment within Turkey is not sensitive to immigrant supply shocks at the local level though at the national level, we find that when the share of immigrants increases, the employment rate of natives decreases, seemingly confirming the labour market competition hypothesis.

Since the difference in the local and national findings might relate to the internal migration of natives, we turn to this next in our empirical analysis. Once again, we use the skill-cell approach, i.e. whether natives with a particular skill respond to immigrants with similar skill by leaving their local labour market. We expect that if natives relocate themselves when they face immigrant inflows, this may cause a very small and insignificant impact of immigrants at localities. Our findings of OLS analysis support this suspicion that native population factors in the share of immigrants in a given locality in their relocation decision. Although we include a large set of factors that may affect this movement, natives' location choice is still affected by the existence of immigrant population in localities, and this is not significantly due to employment concerns in terms of in-migration. The insignificance of employment in the relocation decision prompts us to consider subjective attitudes towards immigrants that may push natives away from localities with high share of immigrants.

Eventually, in our final empirical chapter, we investigate the attitudes of natives towards immigrants. We consider a range of attitudes including attitudes towards same race, different race, poor immigrants, and immigrants' role in place, culture and economy. We employ an ordered probit model to explain our categorical dependent variables that measure natives' attitudes towards immigrants. We find that when the share of immigrants increased in a given region, the probability of reporting negative attitudes increases. Inclusion of several explanatory variables (i.e., individual opinions, beside socio-economic variables) in our ordinary response models do not change the results.

This study makes a number of contributions to the existing literature in the field. First, despite the dominance of developed country cases in the existing literature on immigration, our study adds to the current (particularly South-South migration) literature by looking at various aspects of immigration in a developing country. Secondly, from the point of view of Turkey, this study provides valuable insights into the outcomes of native workers in the labour market, as well as their response to that labour supply shock by moving into another local labour market, which has often been neglected by the existing migration literature in Turkey. Thirdly, we go beyond objective outcomes of immigration to consider attitudes towards it, which may help to suggest more appropriate migration policies. Finally, methodologically, this study provides a way of evaluating the labour market outcomes and the internal migration behaviour of natives by considering individuals' skill level, which has not been done for Turkey. This specific methodology, called skill cell approach, allows us to compare similarly skilled individuals instead of a rough sample of population.

DECLARATION

I confirm that this is my own work and the use of all material from other sources has been properly and fully acknowledged.

Esra Karapinar Kocag

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INTRODUCTION AND OUTLINE OF THE THESIS

Introduction

In this study, we investigate the impacts of immigration on the labour market and the attitudes within society in the context of a developing country. We consider the case of Turkey as a destination developing country for considerable numbers of immigrants mostly from other developing countries. Immigration in Turkey, historically, has consisted of mostly ethnic Turkish or Muslim repatriates. In the beginning of the Republic -starting from early 1920s- immigrants were predominantly from Greece and Balkans because of population exchange policies and conflicts in ancient Ottoman territories. However, wars and conflicts in the other nearby regions (e.g. First Gulf War, conflicts in Iraq, Bosnia, Macedonia, Kosovo) caused Macedonians, Iranians, Iraqis, Kosovars, Bosnians to flee to Turkey during 1980s and 1990s. In the meantime, thousands of Turkish background people in Bulgaria forced to leave Bulgaria and Turkish government opened his gate to this related community in 1989, together with two other big waves of Turkish/Bulgarian repatriations between 1950-1951 and between 1968-1978. Finally, Syrian Civil War have added millions of Syrians in Turkey since 2011. According to the International Organisation for Migration (IOM), more than 4 million foreign born individuals (mostly Syrian immigrants who fled after the civil war in Syria) resided in Turkey in 2017 (IOM, 2017). This number makes up approximately 5.04 per cent of the country's population which is more than the world average of 3.4 per cent. As a result of these events, Turkey have now become a destination country for other nations as well.

Furthermore, Turkey is one of the MINT countries (Mexico, Indonesia, Nigeria and Turkey) which are most likely to experience a demographic explosion over the next decade (IOM, 2014). Considering the country's unique geographic location which brings East and West together and its very promising economic potential which presents more than a traditional emerging economy (O'Neil, n.d.), it would not be surprising if Turkey was host to many millions of additional immigrants from all around the world in the near future. This situation makes Turkey an important case country to investigate immigration.

3.4 per cent of the world in which population migrated to another country in 2017 (UN DESA, 2017) and 38 per cent of the total immigrant population came from a developing country (UN, 2017). This type of migration flow (from a developing country to another) is called South-South migration and still remains poorly understood. Lack of complete and reliable data resources in many developing countries is the underlying reason for this, preventing a correct

understanding of a very dynamic and complex phenomenon. Turkey, as a developing country, is the focus of our study and immigrants in this country predominantly came from developing countries. From that aspect, our study is an example of South-South migration.

This study does not examine the recent immigrant inflows (started in 2011) due to insufficient data on the individual characteristics of immigrants but analyses the impact of previous waves of immigrants. It is worth noting that Turkey is a rarely encountered case country in terms of the characteristics of immigrants. The majority of the immigrant population consist of Bulgarian repatriates and returnees from Germany. Since these immigrants come from the same ethnicity, culture and language, the (potential) barrier between immigrants and non-immigrants in Turkey is much lower than in other countries (e.g. Cuban immigrants in US). The case of Turkey is therefore different to many other immigrant-hosting countries.

Our basic objective is to understand the impact of immigration in Turkey. Given the existing literature, the impact of immigration on the labour market of the host country is the most controversial topic on the immigration studies. Within this literature, Turkey has not often been investigated. Only a few recent papers (Aydemir and Kırdar, 2011; Ceritoglu et al., 2015; Del Carpio and Wagner, 2015; Akgündüz et al., 2015) look at the impact on this country.

In this study, we start with the discussion on the different theoretical approaches in migration in Chapter 1. These theories which have been developed to explain migration analyse the decision-making process to the extent of costs and benefits associated with that movement. After discussing various theories related to migration and the impact on the wages and employment of the natives, this chapter provides a brief presentation of the empirical strategy that are used in Chapters 3 and 4.

Chapter 2 provides background information on immigration in Turkey. Turkey has experienced immigration since the early years of the republic. Because of nation-state building process of the republic in the earlier years (from 1920s), mostly Turkish and Muslim individuals migrated into Turkey. However, recent events in the region such as conflicts and disasters (mostly since 1980s) resulted in immigration of several nations. We also discuss the importance of the law of settlement which has defined who is an immigrant in Turkey and even where to locate immigrants in the country.

Using the skill-cell approach which isolates particular (education and experience) groups of individuals that are most likely to be affected by immigrant supply shock, Chapter 3 presents

our first empirical investigation looking at the impacts of immigrants on the natives' employment outcome. In this chapter, we aim to understand whether natives are displaced by immigrants with the same skills. Our analysis has both local (i.e., provincial and regional) and national dimensions that enable us to understand whether there are different outcomes depending on the level of the analysis (local vs national) as argued in the literature.

We know that natives can respond to labour supply shocks, and the internal migration movements of natives are considerable as a response since about 16% of the Turkish population looks for another place to move according to 1990 and 2000 population census data. Hence, if natives respond to immigrant labour supply shocks in their region by moving somewhere else, this response may reduce the effect of immigration in that region and explain our findings in Chapter 3, a negligible impact of immigration on the natives' employment rate at local level and a larger negative impact at national level.

Chapter 4 analyses the internal migration behaviour of natives which refers to migration between provinces/regions of the country as a response mechanism toward immigration. This chapter supports the findings of the previous chapter. We again rely on the skill-cell approach which considers human capital of immigrants and natives to identify the labour market outcome of (skill) groups of individuals. Besides, it also enables us to compare the results of these two chapters (chapters 3 and 4). In the investigation of the labour market (in Chapter 3) and internal migration behaviour (in Chapter 4), we use population census data which has been obtained from the Turkish Statistical Institute for the years of 1985, 1990 and 2000. These three waves of the population census data are the only available data for Turkey in which we can identify the individual characteristics of immigrants. In the population census data, we have a sample of 770,526 males in 1990 and 944,907 males in 2000.

Unattractiveness of places with a high share of immigrants might, for internal Turkish migrants, be related to several factors including competition over employment in the local labour market. Although economic factors have been widely discussed by policy makers, public and the literature, non-economic factors such as dislike of immigrants might be an important reason for relocation of natives within their country. Therefore, in Chapter 5, we explore natives' attitudes towards immigrants. Using data from the European Social Survey (Round 2 and Round 4) which consists of 3,044 observations in total, we estimate ordered probit models to explain attitudes towards immigrants. Our main explanatory variable of interest is the share of immigrants in a given region, yet, we also include several socio-economic and subjectively

reported (i.e. personality) explanatory variables. Given the current high share of immigrants in the country, this chapter provides information on the factors that influence individual sentiments towards immigrants. The last section of the study presents conclusions, main findings drawn from this study, possible policy implications, and further research areas.

Main contribution

This study makes a number of contributions to the existing literature in the field. Given the difficulty of unreliable and incomplete data, there are only a few studies of immigration in developing countries. Yet, as indicated, immigration in developing countries is as important and as large as immigration in developed countries. Existing literature on immigration is frequently oriented toward developed countries such as the US and European countries (e.g., Card, 1990,2001; Borjas, 1997, 2003; Borjas and Katz, 2007; Aydemir and Borjas, 2007; Dustmann, Frattini and Preston, 2013; Monras, 2015) and there exist only a few studies of immigration in developing countries (e.g., Friedberg, 2001; Gindling, 2009; Facchini, Mayda and Mendola, 2013). Therefore, our study adds to the current -particularly South-South migration- literature by looking at various aspects of immigration in a developing country.

We investigate both the impact of immigrants on the labour market outcome of natives, as well as the response of natives to the immigrant labour supply shock through internal migration. We also consider society's attitudes to immigrants. This enlightens what kind of policies (either economic or social) could possibly be implemented to manage that immigration in a more efficient way by looking at factors affecting opinion formation.

Methodologically, this study provides a way of evaluating the labour market outcomes and internal migration behaviour of natives by considering individuals' skill level. We take into account the outcomes of a skill-specific labour supply shock. This specific methodology, called skill-cell approach, allows us to compare similarly skilled individuals instead of a rough sample of the population. Although there are a few examples of this methodology that applied on a few county cases, it is not commonly applied in the literature (particularly on developing countries). In terms of Turkey-specific literature, this is the first attempt on the investigation of the impact of immigration on natives' outcome.

Limitations and areas for future research

One of the major limitations of the empirical chapters is the small sample size of immigrants. The number of immigrants in the sample is about 2 percent of the total population. A larger per cent sample of immigrants would provide more information on immigrants and this would

allow us to be more confident in the results. There exist only a few resources from which we can find information on immigrants. Population census data seems the only data source providing a rich set of information that includes nationality/country of birth for our two empirical chapters. Therefore, this small number of immigrants in the sample does not prevent us from such an investigation.

Apart from that, the skill-cell approach (particularly the assumption of perfect substitutability of workers within cell), which we have used in two empirical chapters, might be another concern as raised by Ottaviano and Peri (2005; 2011). If the skills of an immigrant are not identical to the skills of a native within the same skill-cell, this may generate biased estimates of the outcome variable, i.e. natives' employment rate and relocation. Given this limitation, this study still relies on this approach since imperfect substitutability of workers within cell is not much likely to be the case in the Turkish labour market. In contrast to the US case (language and culture barriers between Cuban and American workers, for example), most of the immigrants in Turkey have the same language, culture and religion, and their education level is not likely to be downgraded in this country. Any information on when an immigrant entered Turkey would be useful to distinguish the years of experience in the host and home countries, which may help to generate more appropriate cells. However, we do not have such information.

Also, in the analysis, we implicitly assume that there is no cross-cell complementarity. However, if there is complementarity (e.g., an increasing number of immigrants in lower skill groups in the production process may raise the demand for high skilled natives to complement those immigrants), estimation results might be biased towards displacement. Therefore, it might be useful to consider cross complementarity in future work.

Additionally, in Chapter 4, we investigate internal migration movements of natives as an adjustment mechanism to immigration. Even though migration of labour is a crucial equilibrating mechanism, there exist some other mechanisms as well to absorb the effect of immigration such as technological changes, task specialization, and movement of capital. Therefore, to enhance knowledge and to achieve an overarching analysis of immigration, future efforts must be directed into other possible mechanisms.

Immigration is a dynamic process, and involves a complex set of factors (education, gender, scarce resources, access to capital, freedom, attitudes, etc.). This makes it difficult to understand fully its economic and social consequences fully. Although employment or wages

are the most obvious factors to be influenced by immigrant labour supply shocks, this is only one piece of the economic effects of immigration as it is likely to have several direct (e.g. wage-employment level) and indirect effects (e.g., task specialisation) in the host economy. In addition, focusing mainly on the labour market gives a partial and incomplete picture on the impact of immigration, this is still a valuable piece of work in the literature.

Inconsistent results such as no impact vs considerable negative impact on the wages/employment in the relevant literature (for example, Card, 2001, Ottaviano and Peri, 2008; 2012; Borjas, Grogger and Hanson, 2012) point out the lack of robustness in the field. If a vast majority of studies in the field come to a similar conclusion by applying different methodologies, data sources, or different country cases, we could be more confident on the impact of immigration in the host countries. However, there needs to be further investigation and studies to achieve that robustness. Nevertheless, the biggest obstacle seems to be sufficiency of proper documentation of immigrant inflows. Only then, can we provide evidence-based research, which may help contribute to better policies and improved legal frameworks.

CHAPTER 1 CONCEPTUAL FRAMEWORK

There is a set of theories of migration in which migration is seen from a different perspective or added into another theory. In those theories or models of migration, the immigrant has played a role in the destination economy as a labour supplier, investor, consumer or producer (Shields and Shields, 1989). We evaluate immigrants as labour suppliers as part of the aim of this study. Some of the approaches evaluate migration from a micro perspective such as the neoclassical theory of migration, human capital theory of migration or new economics theory of migration while some other approaches analyse migration flows from a macro perspective such as world systems theory. Although the calculation of net benefit from migration is the general concept in the theories, each theory explains the decision-making process differently. Therefore, it is important to consider how they differ in terms of decision-making in building up an empirical study.

We discuss different theories of migration, which includes theories of neoclassical, new economics, network, segmented labour market, world system, as well as Borjas' approach to show how they differ from each other. The neoclassical theory of migration, particularly the human capital theory, provides a useful start-up framework to explain the movements of individuals.

There are several motivations for immigration such as economic, social and political factors. In the case of developing countries, reducing risk maybe a major motivator rather than the differences in wages or earnings between two countries, e.g. immigrants from Syria. In the context of immigration in Turkey, we know that political conflicts, war and forced migration are important determinants of migration. That means immigrants are likely to consider reducing risk to life, lifestyle and property to be more than the wage expectations in the process of decision-making. However, whether they are economic immigrants or not, they are likely to supply their labour in the Turkish labour market. Therefore, in our empirical analysis, we do not distinguish between economic and non-economic immigrants since in either case, they are likely to influence labour market outcomes of natives even though the prime catalyst of their move may have been different. Besides, we do not have enough observations (i.e. number of immigrants) to have separate analysis on both -economic and non-economic- groups of immigrants.

This chapter begins with a review of the theories of migration that are related to decision-making of individuals. Here, we attempt to introduce and understand existing migration theories that may help our investigation on migration in a developing country. Later, we introduce the theoretical framework of the impact of immigration in the host labour market.

1.1. Theories of migration

In this section we aim to provide an overview of either micro or macro migration theories. In order to get a clearer picture, we distinguish between the decision to migrate and the impact of migration. In the first part, we introduce theories that are related to how (potential) immigrants decide to move somewhere else. To start with we investigate the neoclassical point of view, human capital investment theory in particular and then a few other micro level theories. We later on investigate world systems theory and the dual or segmented labour market theory, which are macro level migration models. Finally, we introduce Borjas' migration model and its improvements, which is based on a neoclassical micro approach.

Theories that are related to migration decision mostly emphasise a disequilibrium in the labour market - differentials in the wage levels across labour markets, which refers to economic immigrants. However, in our case country, Turkey, migration reasons of immigrants are predominantly not related to economic factors such as wage levels. As mentioned in Chapter 2, these immigrants are mostly fleeing from wars and conflicts in their countries. Even though these immigrants did not directly account for wage levels or employment opportunities in Turkey, their risk aversive behaviour might still relate to economic attributes at least indirectly since uneven conditions in home country generate safety concerns and risk on income (both individual and household). From this aspect, we can relate our analysis to the neoclassical approach. Because our data is not at household level, we are not able to account for a migration decision that is made within a family to reduce the risk on household income as argued by new economics theory of migration. Besides, lack of industrial level data hinders to take into account of segmentation in the labour market as introduced in segmented labour market theory. Having an individual level data set does also not allow us to look at migration from world systems theory of migration which requires macro level data.

In Chapter 3, we apply an instrumental variable analysis in which the instrument is historical pattern of immigrants from a given country of birth to correct (potential) endogeneity due to non-random location choice of immigrants. In this analysis, we argue that immigrants from a given country of birth settle into places where the previous cohort of the same country of birth

has already settled to lower both economic and non-economic costs of migration. This view of settlement relates to network theory of migration.

Although in this review of theories, we mainly focus on the economic impact in the labour market (e.g. employment/wage), the inflow of immigrants into a host country may also generate non-economic (or psychological) externalities on society. Ethnic, religious and cultural compositional change in host society due to immigrant inflows is likely to influence natives' preferences for immigrants (Edo et al., 2018). Therefore, we can say that immigration seems an important factor to shape attitudes in the society. Together with its economic consequences such as employment rate of natives, it may also have attitudinal effects on society as we investigate in Chapter 4 and Chapter 5.

Even though we do not apply all of migration theories presented in this study, we still think that it is useful to have them in one place from the beginning (i.e. decision making) to the end (i.e. the results of this decision in the host country). This will allow us to see different approaches in the literature, and to provide reasoning for why we are not able to consider each of them in our analysis.

1.1.1. Decision to migrate

a. Neoclassical theory of migration and human capital theory

In the neoclassical model, migration arises from a disequilibrium in the labour market. Starting with Smith (1776), the migration decision has been analysed as a response to the differentials in the wage levels across labour markets, which can be characterised by a push-pull factors framework. Push factors are associated with undesirable conditions such as low wages, few jobs, and low standard of living in the country of origin (i.e. motivator for out-migration). Pull factors, however, are associated with the desirable conditions such as high wages, more job opportunities and good quality of living in the destination country. This approach views immigrants as labour suppliers and argues that the flow of labour continues until the wage levels are equalised between two regions. In their study, Shields and Shields (1989) summarise this approach as follows:

$$M_{ij} = \beta_{ij}(w_j - w_i) \quad \textbf{(1.1)}$$

where subscript i represents the source country/region while subscript j represents the destination country/region. M_{ij} presents migration between source and destination countries. w is wage level and β is barrier to migration (e.g. distance and imperfect information). Assuming a competitive market, in the case of too many jobs and too few workers in the labour market, the wage level would be higher than the market clearing level. Alternatively, when there are few jobs and too many workers (very high competition), the wage level would be lower than the market clearing level. Those wage differentials lead to the migration from low wage (labour surplus) to high wage (labour scarce) regions (de Haas, 2008). Barriers in the equation (β_{ij}) presents the restrictions on the speed of adjustments, so -*ceteris paribus*- the lower barrier between two labour markets, the faster adjustment (i.e. equalization of wage rates between regions). For example, in the existence of large wage differences and no barriers between two labour markets, individuals in the lower wage country will response to this disequilibrium by moving their labour to high wage country labour market. This response will continue until wages in both countries are equalised. If there are no barriers between these two countries (e.g. no visa restrictions, very close countries, perfect information, etc.), wage levels will equalise in a short time. Otherwise, it can take very long time to adjust wages.

Initially, wage differentials were the focus of the neoclassical approach and this approach was then extended to consider expected lifetime earnings instead of actual earnings, although the findings are similar in the previous and extended model (Bauer and Zimmernann, 1999). Expected earnings do not only consider the actual wage paid to a worker, but also consider the probability of securing wage employment (Todaro, 1996). After all, neoclassical theory suggests a linear relationship between wage and migration, yet, empirical evidence shows it does not hold (Kurekova, 2011). In addition to this, migration is not a cost-free action. Therefore, an individual can migrate if he or she can afford the cost of migration, so "it is not the poorest nations that supply the most migrants" (Massey et al., 1998: 175). This implies that if the wealth of a country increases, *ceteris paribus*, the migration rate should increase because migration becomes more affordable, which does not seem to match the neoclassical perspective. On the one hand, increasing wealth means better earnings and living conditions,i.e., there is less motivation (push factors) to migrate out of that market. On the other hand, the cost of migration is more affordable as wealth increases. This may make the migration into other regions/countries easier. The net effect of migration is therefore uncertain. For example, the existence of barriers between countries results in immigrants continuing to survive in lower income countries. 47 per cent (73.9 million) of global migrant stocks migrated

into a developing country from another developing country (Ratha and Shaw, 2007). As seen in the South-South migration, even though wage differentials are small, a large number of people in developing countries migrate into other developing countries.

From a micro level neoclassical theory point of view, immigrants are viewed as rational actors who calculate the cost (monetary and non-monetary) and benefit (earnings in the host country) in the decision-making process (de Haas, 2008). This benefit maximising calculation is seen as the most important factor of the decision-making. The human capital theory, which is introduced by Sjaadstad (1962), adds to neoclassical theory by considering individual characteristics (i.e. heterogeneity of labour) in determining migration and it considers migration as an investment in an individual's well-being (Bodvarsson and Van den Berg, 2013). The migration decision is likely to be different as skill, gender, expectations, occupations, etc. are different (Kurekova, 2011). Accordingly, in the light of those personal characteristics Sjaadstad (1962) argues that migrants consider the present value of returns both in potential destination(s) and in the home, and they decide to move if the present value of lifetime earnings in the alternative destination is larger than that in the origin along with the cost of movement. Suppose that there are two labour markets ("*O"* and "*D"*) where a worker is employed in location O and earning W_o. If he migrates to location D, he will earn W_D. Those locations might be inside the country (i.e. internal migration) or crossing the border (i.e. international migration). The movement from one place to another place is not a zero-cost action. It comes along with a cost. That cost does not necessarily include only monetary expenses (e.g. travel, settlement somewhere else, etc.) but also involves non-monetary/psychic costs (e.g. homesickness, separation from family, etc.). After all of the calculations, the migration decision is represented by the net benefit from migration. So, the present value of lifetime earnings in two different locations is given by

$$PV_{\mathrm{O}} = \sum_{t=0}^{T} \frac{w_O}{(1+r)} t \qquad \textbf{(1.2)}$$

$$PV_{\mathrm{D}} = \sum_{t=0}^{T} \frac{w_D}{(1+r)} t \qquad \textbf{(1.3)}$$

Where PV_O is present value of lifetime earnings in the country of origin; PV_D is the present value of lifetime earnings in the country of destination; and r is a discount rate that individuals apply to their income. Finally, T is time spent working in a lifetime. Equation 1.2 and 1.3 imply that the present value of lifetime earnings is likely to be higher for young people, which makes

migration more profitable for them. In later chapters we use a potential experience variable that considers the age effect in the framework. Additionally, the cost of migration is given as follows:

$$C = (Monetary\ Costs) + (Non - monetary\ Costs) \quad \textbf{(1.4)}$$

So, the net benefit from migration is given by

$$NB = PV_D - PV_O - C \quad \textbf{(1.5)}$$

This human capital investment model tells us that migration occurs if the net benefit from migration is positive. As can easily be seen from Equation 1.5, the probability of migration increases if returns to labour increase in the destination country, the returns to labour decreases in the country of origin, and the cost of migration decreases. This implies a positive or negative self-selection of immigrants based on their observable and unobservable characteristics (Chiswick, 1999; Borjas, 1987). Positive selection refers to immigrants who are endowed with high skill, while negative selection refers to immigrants with low skill or education. So, for example, high skilled labour immigration occurs if returns to high skilled labour are larger in the destination country than in the source country. Immigrant selectivity is viewed differently by Borjas and Chiswick. In his early study, Chiswick (1978) suggests that immigrants have high level of 'innate labour market ability', in other words, they are more self-motivated and harder worker than native labours. That's why earnings of an immigrant exceed that of a native. However, Borjas (1987) argues that populations in both sending and receiving countries vary across personal characteristics (e.g. age, education, experience), and distinguishes between the size of inflows (i.e. scale effect) and the quality of immigrants (i.e. composition effect). This differentiation allows him to anticipate which specific factors influence flows and quality of those flows.

Cost of migration (C) is another component of Equation 1.5 that adversely affects the net benefit from migration (NB). Technological improvements such as easier and faster

transportation is one of the ways to decrease the cost of migration. In the empirical framework of this study, we control for time that might capture technological improvements over time.

b. New economics theory of migration

The new economics theory emerged as a reaction against the assumptions of neoclassical theory. As mentioned earlier, the neoclassical theory of migration considers individuals as the main decision makers who calculate the costs and benefits of migration and decide whether to move or not. Stark and Taylor (1991) moderate this framework by considering individuals as part of a decision-making unit. The argument is that the migration decision is made by a group of individuals (for instance, the family) who work together to maximise their income and minimize the risk in the market (Stark, 1984; Stark and Levhari, 1982). According to this approach, some family members may migrate into different labour markets while others may stay in the original labour market to minimize the risks and maximize the expected income (Massey et al, 1993). It is important to distinguish the level of risk to the household income in a developed country and in a developing country. Associated risk to household income is minimized in developed countries thanks to private insurance markets, government programmes, more accessible credit opportunities etc., on the other hand, the existence of higher risk due to fewer institutional mechanisms to alleviate risk in developing countries increases the pressure to migrate somewhere else (Massey et al., 1993). There is a clear message of this approach which is that wage or earning is not the only factor in the migration decision but other factors affecting risks on life as well as income may lead to the decision to migrate.

The new economics theory is about individuals' decision-making as part of a unit and the main advantage is that they may diversify their risk. Nevertheless, the concept of the new economics theory of migration is still similar to the neoclassical approach: maximisation of economic interest. Different from the neoclassical framework, in this theory people work collectively to achieve their goal.

Massey and Espinosa (1997) provide evidence from Mexico by using data for the period of 1987-92 from 25 communities which sent a majority of migrants to the US. The risk on the family income is measured by price inflation and currency devaluation. They found that when the peso was devaluated, and inflation increased, the odds of migration decrease because the entrance fee, which is in US dollar to cross the US border are more expensive. In addition, the

theory argues that the need for and access to capital for consumption and production purposes are important factors to explain a migration decision. Relatedly, Massey and Espinosa (1997) include several variables (such as real interest rate, acquisition of housing, the purchase of land, and the establishment of small business) to capture this effect. The findings of their empirical analysis support the predictions of the new economics theory of migration. Interest rate which presents accessibility to capital are found to be the key macro indicators to explain US-Mexico migration, but not wages. Increasing capital needs also seem to be important in the migration decision, e.g. home or business ownership decreases the odds of migration as they mean less need for capital.

c. Network theory of migration

Network theory of migration contributes to the neoclassical cost-benefit calculation by considering social structure as well. This social structure is related to interpersonal communications. Communication or networks connect migrants and non-migrants in the source and host countries through kinship, friendship and shared community origin (Massey, 1990). Because of the fact that social connections in the host area decrease the costs and the risk, as well as increase the expected return, it increases the probability of migration (Massey, 1990). Those networks provide social capital which offers access to foreign employment (Massey et al., 1993), and provides social support to make social integration into the host country easier (Giulietti, Schluter and Wahba, 2013). Returning to Equation 5, networks may increase the likelihood of employment in the destination country (increasing PV_D) and reduce the monetary and non-monetary costs (decreasing C). In fact, networks may reduce C such that migration into location I continues even after $PV_D = PV_O$. Social capital also enables and promotes migration just as material and human capital such as education or skill (de Haas, 2008). Consequently, this social web amongst people make the migration controls hard for governments.

Social networks ease migration both in the context of South-North migration and South-South migration. Yet, in the context of South–South migration, ethnic, family or social ties are indeed a crucial determinant to consider (IOM, 2013), "as they define not only the sense of belonging, but also the way networks are shaped and the way relationships function" (Ibid, p.52). Those networks help economic and social integration in the host country through social support and information to find a job (Giulietti, Schluter and Wahba, 2013).

This theory argues that the existence of social networks helps the migration to continue. However, there are several factors which might influence the continuity of migration movements. De Haas (2008) draws up those factors as follows:

1. If the reason for migration disappears, migration movements might slow down
2. There is a possibility of weakened networks over time which may reduce migration through network
3. Even though it is hard to control by governments, legal and physical barriers may affect the migration
4. Although networks provide an opportunity for some groups, it might be exclusive for some other groups of people in their access into a particular labour market.

Empirical investigations of the theory confirm that existence of networks is associated with international migration movements. Massey and García Espana (1987) measure the network in two ways: having a member of the household outside the country and the proportion of the population within each community who have migrated abroad. Findings from Mexican data show that both ways of measurement increase the likelihood of migration to US. Similar results are found by Massey and Espinosa (1997) and Spittel (1998) as well, likewise in the context of Mexican-US migration.

d. Segmented labour market theory

Segmented labour market theory is a macro level migration theory. This theory was developed by Piore (1979) and it explains migration flows as a result of labour demands of modern industrial societies (Massey et al., 1993). Piore (1979) argues the existence of two separated labour markets - primary and secondary. Primary labour markets represent jobs offering relatively high wages, good working conditions, employment stability, potential for advancement and protective work rules, while secondary labour markets offer much less or any of these advantages (Licht, 1981). Eventually, migration is seen not due to earning differentials, risk aversion or social networking but due to demand for immigrants in the secondary markets.

Accordingly, this theory focuses on the demand for foreign workers in the developed countries instead of push factors in the source countries (Massey et al., 1993). Characteristics of industrial societies generate demand for immigrant workers, i.e., wages are part of social status in the developed societies, therefore, employers may not increase the wage level at the lower bottom of the hierarchy to eliminate the pressure on the wage increase from the higher level of

hierarchy (Massey et al., 1993). So, this approach mainly emphasizes the social and labour market structures in the developed nations and the necessity of immigrant workers to fill the vacancies to protect the social status of natives. Apart from social status or hierarchy in the developed countries, insufficient labour in the low skilled jobs requires immigrants to be employed in those jobs.

This kind of segmentation in the labour market may not exist in the developing countries. Therefore, this theory may not explain the South-South migration, although it clarifies the demand-pull of South-North migration. However, the existence of demand for immigrant labour in certain jobs may generate this kind of segmentation, even though the social statues of natives are not likely to be pronounced as it is in the developed countries.

However, this theory does not consider different rates of immigration from similar countries in terms of economic structures (Kurekova, 2011). Furthermore, segmentation in the labour market may not be as clear as explained in the theory, which may lead to a confusion in the findings of empirical studies since there is no precise division of the primary and secondary sectors (Kurekova, 2011). This theory is quite hard to test since it requires to have demand in the sectors where immigrant workers are dominantly employed. Yet, Massey and Espinosa (1997) use annual growth rate in the employment as the demand side predictor of immigration. They find an increase in the employment growth increases immigration from Mexico though the relationship is statistically significant only for illegal immigrants not for the legal ones.

e. World systems theory of migration

World systems theory is another macro level theory of migration which is built on Wallarstein's (1974) work. He defines the world system as a social system with boundaries, structures, members, rules of legitimation and coherence where embedded modern nation states in this system (Wallerstein, 2011). Unequal development across nations and capitalism since the sixteenth century in Europe is emphasised to explain the world system. Expansion of the countries (or colonisation) led to migration movements. Labour migration is characterised by two factors: "the growing use of immigrant labo[u]r in the tertiary sector of developed countries and the growing use of foreign and native migrants in the secondary sector of the developing countries" (Sassen, 1988: 53). The motivation of higher profit pulls firms into less developed countries means cheaper land, workers, raw materials and consumers (Massey et al., 1993). The expansion of capitalist economic relations in less developed countries generates a mobile

population. Colonisation movements in the past have created a link between developed countries and their colonies. Even though those colonies do not exist today, the link between them still exists as a result of previously established relations. Consequently, the structure of the world system (i.e., increasing globalisation, penetration of capitalist firms into developing parts of the world) has been responsible for a generation of a population migrating internationally.

In this theory, we do not see any individual factor that affects the decision-making process. Yet, the whole process of migration is determined by the employment conditions and historical links between countries at the global level.

Empirical testing of the theory requires finding a measurement of the penetration of the developing country by a developed country. Sassen (1988) accentuates direct foreign investments as a migration push factor, and Massey and Espinosa (1997) use US foreign direct investments in Mexico to explain whether the predictions of the world system theory take place in the context of Mexico-US migration. However, contrary to expectations, they cannot support the theory that an increase in the direct foreign investment decreases the odds of illegal migration to the US. Conversely, Ricketts (1987) in his empirical study which involves 18 Caribbean countries for the period of 1966-77 finds that increasing US direct investment in those countries increases migration from those countries to the US.

The world systems theory does not fit in with the context of South-South migration since the capacity of the capitalist penetration of a developing country is far lower than a developed country. Therefore, migration from a developing country to another developing country is not likely to be related with colonisation movements.

f. Borjas' (1987) model of migration and his extensions

Empirical analysis of two chapters in this study are based on Borjas' work. Borjas does not establish a new theory of migration but he introduces a new aspect in the neoclassical human capital theory of migration, which is also supported by an empirical test of the theory. The assumption of the model is that migration is motivated by the income differentials, net of mobility costs, between the home and host countries. This assumption is what is assumed in the human capital theory. Yet, he additionally takes into account skill differentials across the population. He assumes that individuals in both countries constitute different skills, education levels, age profiles and other personal characteristics, so, the migration decision depends on how potential immigrants with a particular skill benefit from immigration (Bodvarsson and

Van den Berg, 2013). Because the distribution of skills is most likely to differ in the host country, each immigrant with a particular skill endowment should not have the same benefit or cost in this labour market. In other words, the thinking behind this approach is that the migration decision is not based on international wage differences, but it depends on where an immigrant with particular skill would fit in the host country's labour market and how much those skills are transferable into another country (Bodvarsson and Van den Berg, 2013). When we consider an immigrant with a particular skill (e.g. high school graduate and low labour market experience), we need to evaluate with whom this immigrant competes (where does he fit) and whether he can operate his skills in the host country labour market as he did in his home country (skill transferability).

For the sake of simplicity, Borjas (1987) assumes that the mean earnings of equally skilled natives and immigrants are the same in the host country market. So, the earnings distribution in the home country for a particular skill group -type 1 labour- (w_{H1}) is given by

$$\ln w_{H1} = \mu_{H1} + \varepsilon_{H1}, \varepsilon_{H1} \sim N(0, {\sigma_{H1}}^2) \quad \textbf{(1.6)}$$

where μ_{H1} is mean income of an individual with type 1 skill in the home country labour market if he does not migrate and ε_{H1} is random error term, assumed to have a zero mean and variance ${\sigma_{H1}}^2$. In the host country labour market, an immigrant will earn as follows:

$$\ln w_{D1} = \mu_{D1} + \varepsilon_{D1}, \varepsilon_{D1} \sim N(0, {\sigma_{D1}}^2) \quad \textbf{(1.7)}$$

where μ_{D1} is mean income of an individual in the host country and again ε_{D1} is random with the same assumptions. An individual in the home country migrates into the host country if

$$w_{D1} > w_{H1} + C \quad \textbf{(1.8)}$$

or

$$\frac{w_{H1}}{w_{D1}+C} > 1 \quad \textbf{(1.9)}$$

After taking the logarithm of the expression, migration decision of an individual in country H is determined by the sign of I.

$$I \equiv \ln(w_{D1}) - \ln(w_{H1} + C) > 0 \quad \textbf{(1.10)}$$

$$I \approx (\mu_{D1} - \mu_{H1} - \pi) + (\varepsilon_{D1} - \varepsilon_{H1}) > 0 \quad \textbf{(1.11)}$$

where C presents costs of migration in Equation 1.10. π presents time equivalent measure of migration costs and assumed to be constant for everyone in the home country.

This is conceptually similar to the neoclassical model; however, it differs due to the consideration of skill endowments (e.g. type 1 labour). Accordingly, Borjas explains why not all the population in the home country move to the host country. The differences in the mean income and the cost of migration (monetary and psychic) across the skill groups matter for the migration decision. Additionally, the statutory restrictions that determine the number of immigrants are important. Those reflect the standard neoclassical theory of migration. However, he highlights individual heterogeneity, whereby individuals with different skill endowments have different incentives to migrate. For example, high income tax in the host country in comparison with the home country is a disincentive for high-income earners/high skilled labour or protection of the low-income labour is an incentive for low skilled labours (Borjas, 1987). He shows that immigrants are not always positively selected (i.e. high skilled migration is not always the case due to those incentives/disincentives), so, "skills flow to whichever country offers the highest price for them" (Borjas, 1991:39). If high-income labours are taxed in the host country more than in the home country and low-income labours are better insured, this generates more incentives for low skilled individuals to migrate into that labour market (Borjas, 1989).

In a very similar way as in Equation 1.10 which shows who is likely to migrate, Borjas (2001) formulates the location choice of immigrants who are born in country o and assumed to be income maximizer within a particular host country as follows:

$$I = \max_j\{w_{jk}\} - w_{ok} - C \quad \textbf{(1.12)}$$

where w_{jk} is the wage level in state j for the native worker with skill k (e.g. a high school graduate worker) and w_{ok} is the wage level in country o for a worker with skill k. C presents the cost of migration. Immigrants in the host country will settle in particular regions/states where they gain the highest return for their skills. Suppose an immigrant with a particular skill decides to move to county l. The following condition must be satisfied:

$$w_{lk} = \max_j \{w_{jk}\} \quad \textbf{(1.13)}$$

Although the level of fixed costs has an impact on the number of immigrants who decide to migrate into that host country, it has no effect on the internal location choice. Those immigrants already paid the cost of movement to the host country and it costs little more to choose a county offering the best income opportunities (Borjas, 2001). Hence, that internal movement cost might be ignored.

There is an important implication of that sorting of immigrants in particular geographic units within the country which is highlighted by Borjas (1999): spatial correlations. In economic theory, assuming an upward slope labour supply curve and a closed labour market which is characterised by no capital and labour responses, immigration leads to an increase in the wage of complementary native workers, although it causes a decrease in the wage of substitute native workers.

There are some econometric concerns that are worth emphasising. First, we assume that the distribution of immigrants across local labour markets in the host country is random. Secondly, there is assumed to be no response from natives to immigration flows into their labour market. If the labour markets are defined such as states or regions in the host country, the impact of immigrants on the wage or employment outcome of natives may not reflect the true impact of immigration on the host economy because of two problems pointed out by Borjas (1999):

1. The distributions of immigrants across the geographic units of the host country are not likely to be chosen randomly. If so, positive spatial correlation between immigration and the local outcomes do not mean a complementarity between native workers and immigrant workers but it implies that immigrants reside in areas doing well over years.

In other words, immigrants choose labour markets that offer the highest wages, which results in an endogeneity problem.

2. Natives in a given locality may respond to immigration. The response might be movement of labour or capital into another locality up to the point where the wages of natives and returns to capital equalise across localities. If this is the case (e.g. natives' out-migration), the impact of immigration on natives' wage/employment outcome in a given locality might be downward biased as a result of diffusion of the impact into other localities.

Consequently, the tendency to move into places potentially offering higher returns for particular skills and potential native responses lead to biased results. Eventually Borjas (2003) proposes an approach at the national level, and so eliminates the geographic diffusion of the impact. He generates different skill groups in the population and considers relative labour supply shifts in each skill group to identify the impact of immigrants on the outcomes of similarly skilled natives. This approach is called the national level skill-cell approach.

In this study, we utilise the skill-cell approach since it provides an appropriate theoretical perspective on the impact of immigration on the natives' outcomes and we can easily apply this approach in our empirical investigation.

Critiques of the neoclassical approach

In the neoclassical approach, high skill migration is more likely to take place since returns to migration are higher for high skilled individuals, which means positive selection of immigrants. However, the positive selection of immigrants from source countries is not always supported by the empirical studies (for example, *see* Borjas 1985; 1987; 1994**).** The quality of cohort is not the same either across different source countries or over time. Migration decisions of individuals depend on working/living conditions in home and host countries. Therefore, over time, immigration to a particular country might be beneficial for some individuals but not for others. In some cohorts, immigrants from a given country of origin are high skilled while they

are low skilled in another cohort. The findings of Borjas (1987) show that the selection of immigrants is affected by source country specific factors such as income inequality, repressive or competitive political structure. As an example, when income inequality increases in the source country, the incentive to migrate out decreases for people in the upper tail of the distribution since higher income inequality puts individuals with high level of income in a better situation while it is just the opposite for low income individuals in the source country (i.e., wages abroad are not as attractive as for low income earners/skilled labours). This causes a decrease in the quality of immigrant population from that source country. Therefore, immigrants from source countries with high level of income inequality are more negatively selected and vice versa. Source country specific political (e.g. political freedom and stability) and economic conditions (e.g. per capita GNP, household income, mobility costs) are also found to be important factors to explain selection of immigrants.

After all, the neoclassical theory of migration is based on the push-pull framework, which emphasises the economic context of the flows (Bauer and Zimmermann, 1999). This framework, however, still does not provide a clear answer why people migrate to some places generally non-randomly (de Haas, 2008). As mentioned by de Haas (2008) the push pull framework tends to ignore heterogeneity in individual attributes and internal sorting of individuals. Our data show that there is considerable disparity in the skills of individuals in Turkey and immigrants cluster in particular areas as seen in the maps in Chapter 2. Those push/pull factors may motivate some individuals to leave and some others to stay. Additionally, push and pull factors are mirror images and it is hard to establish which one is dominant.

In brief, the reason for the movement of individuals is more complicated than income differentials, environmental or population concerns, but those movements are related to expectations of finding a more satisfying life (de Haas, 2008). This reflects the complexity of human behaviour which might be influenced by several factors and may not have a general reaction from each person.

1.1.2. The impact of immigration on the host labour market

In this section we build up a theoretical framework to provide a baseline for our empirical strategy. In the formation of this framework we follow Borjas (2014) who builds on the human capital investment theory by considering the characteristics of natives and immigrants. Individuals are chosen as the units of our analysis instead of households because our data is at

individual level. To begin with, we exploit a standard model that assumes homogeneous labour in a closed economy. An immigrant inflow occurs into this economy from a source country. Suppose capital is held constant and L presents the quantities of labour and C is capital in the labour market. N and M present number of natives and immigrants, respectively (L=N+M). We assume that the labour market is not segmented into natives and immigrants, but there is only one labour market where natives and immigrants meet up. For simplicity, we also assume those natives and immigrants are perfect substitutes for each other in production. Additionally, aggregate production has CES (Constant Elasticity of Substitution). The production function then combines labour and capital to produce output (Q).

$$Q = f(C, L) = [\rho C^{\alpha} + (1 - \rho)L^{\alpha}]^{1/\alpha} \quad \textbf{(1.14)}$$

ρ is a vector presenting technology parameters which shift production frontier and α=1-1/σ_{CL}. Elasticity of substitution between capital and labour (σ_{CL}) is given as follows:

$$\sigma_{CL} = \frac{1}{1-\alpha} \quad \textbf{(1.15)}$$

To simplify, assume constant returns to scale in the production technology (i.e. if all inputs are increased three times, output increases three times as well). We also assume firms maximise their profit and employ all of the resources as long as their price is equal to their marginal productivity. Therefore, Equation 1.16 gives factor demand for each resource or input:

$$P_L = f(L) = MP_L \quad \textbf{(1.16)}$$

where P_L is the price of labour (L) and MP_L is the value of marginal productivity of labour. This suggests that the wage (P_L) depends on the total quantities of labour employed and since wage (P_L) is a function of total labour and total labour is native plus immigrant labour, native wages are (co)determined by the quantity of immigrant labour. An increase in immigration would, assuming there is no corresponding increase in demand for labour, result in a reduced wage rate as the marginal productivity of labour falls.

Although this simple model above gives an idea about the equilibrium in the labour market, the assumption of homogeneous labour is not likely to hold (i.e. natives and immigrants are not identical). Suppose that there are a number of different labour inputs in production (e.g. high educated, low educated, younger/less experienced, older/more experienced, etc.). Therefore, from a more realistic point of view, the labour market is more likely to be heterogeneous, i.e.

workers are endowed with different skills. If we assume this, the impact of immigration will not be the same for each group. There are different skill groups in the market and we assume that natives and immigrants are perfect substitutes only within the same skill group. The assumption of perfect substitution within the same skill group seems a strong one: Ottaviano and Peri (2012), for instance, argue that it is not likely to hold in the US context due to language barrier, cultural factors or educational equivalence. However, Jaeger (2007) and Borjas, Grogger and Hanson (2010) find no evidence to reject the hypothesis of perfect substitution of natives and immigrants within a cell in their analysis. Yet, in the case of Turkey, it seems there are more likely to be close substitutes within particular groups. In our sample almost half of the population are mostly immigrants from Bulgaria who are repatriate Turkish-Muslims. Bulgarian repatriates and the Turkish population in Turkey used to live in Ottoman lands until the dismemberment of the Ottoman Empire and the foundation of the Turkish Republic. They come from the same culture and language and are given work permits easily following their arrival into Turkey. Additionally, acceptance of their educational background in Turkey seems pretty equal. First level and high school diplomas from Bulgaria are equivalent to Turkish diplomas (*see* National Education Ministry's guideline[1]). With regard to higher education, graduates need to provide related documents such as diplomas and transcripts to be investigated whether learning outcomes in a particular programme are equal to that programme in universities in Turkey (*see* Equivalence Office of Council of Higher Education[2]). Even though university education requires more investigation for equivalency, it is still a standard procedure that necessitates maybe some additional courses. If we consider a lot more first level and high school level graduates than university graduates in our sample, we can say educational equivalence is not an issue between the two countries, Turkey and Bulgaria. Hence, we are not much concerned about imperfect substitution.

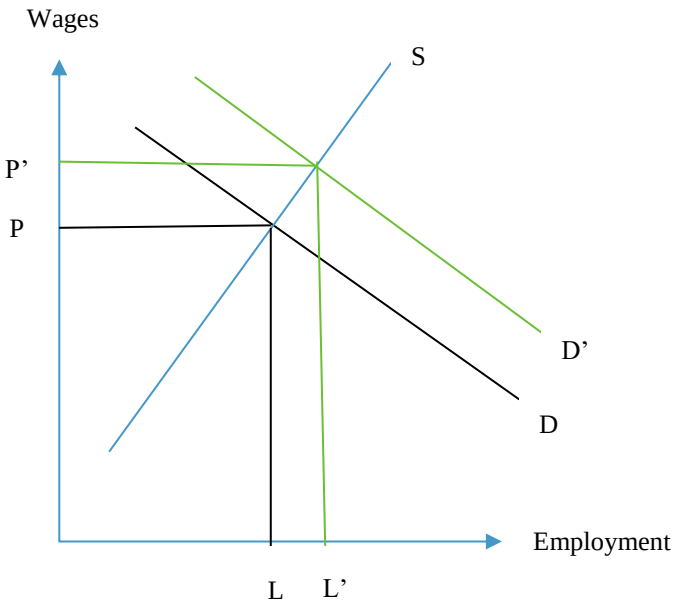
Accordingly, each group has its own equilibrium in the context of labour demand and supply. An inflow of immigrants does not necessarily shift the supply curves in each group by the same amount since each skill group has different incentives to migrate. We investigate how this difference in the skill distributions may affect the natives' labour market outcome. Borjas (1999) states that natives may benefit from migration if their skill endowment differ from that

[1] http://ttkb.meb.gov.tr/dosyalar/denklik/2011_denklikk%C4%B1lavuzu.pdf
[2] http://www.yok.gov.tr/en/web/en-denklik-birimi/home

of immigrants and only natives whose skills are complement to immigrants, (not all natives) gain.

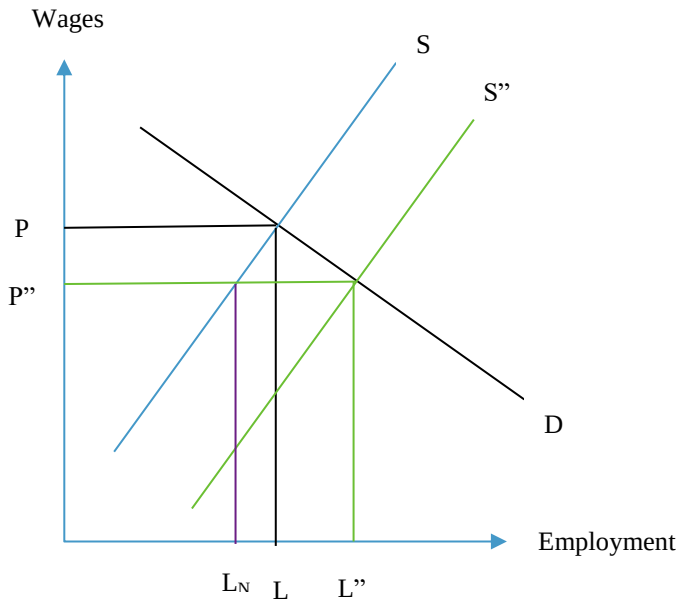
Let us suppose that the labour market is in equilibrium with L number of natives at P wage level and D level of demand for a particular skill group as demonstrated in the Figure 1.1. Assuming complementarity of natives and immigrants within a cell, i.e. they produce the output together, they do not compete, an inflow of immigrants increases the demand for natives in that group from D to D'. This basically describes within cell complementarity which might arise from language fluency as examined in Peri and Sparber (2009). Accordingly, inflow of immigrants motivates task specialisation in production where immigrants in a particular cell have comparative advantage in the manual labour tasks while native workers within that cell have comparative advantage in communication tasks (Peri and Sparber, 2009). So, an inflow of immigrants who are specialised in physical tasks increases the demand for native workers who specialise in communication tasks in the host country's labour market, although those natives and immigrants have similar skills, e.g. high school diploma and 10 years of labour market experience. This increase in the demand for that particular native group, *ceteris paribus*, gives rise to an increase in the wage of that native group. The quantity of labour increases to L' from L as wage level increases to P' from P.

Figure 1. 1 Equilibrium wage and employment for a particular group of natives, complementarity



On the contrary, in the case of competition between similarly skilled natives and immigrants in the host country labour market, equilibrium level of wage and employment is demonstrated in Figure 1.2. An inflow of immigrants with a particular skill endowment increases the supply of workers in that particular skill group, holding the demand constant. The supply curve, therefore, shifts to the right. The equilibrium level of employment and wages occur at the level of L'' and P'', respectively. The competition between immigrants and natives in the group lowers the employment and earning of natives.

Figure 1. 2 Equilibrium wage and employment for a particular group of natives, substitution



This upward sloping labour supply curve indicates that the inflow of immigrants creates a downward pressure on the wage level. As a result, some of the natives in this labour market do leave this market and fall out of work since they are not willing to work at this lower wage level. However, if the supply curve was inelastic, all of the native workers would work from a given wage level even if the wage level decreases. An assumption of the vertical supply curve ignores the employment responses of natives (Dustmann, Schönberg and Stuhler, 2016). So, an influx of immigrant labour would not have an impact on the natives' employment outcome. Yet, it seems more realistic to consider an upward sloping labour supply curve.

From South-South migration point of view, we may expect more competition between natives and immigrants since their skill endowments are not likely to be very different. Heavy agricultural weight in the economy (Ratha and Shaw, 2007) of the developing countries makes us think that natives in developing countries face more competition from immigrants from other developing countries than those in the developed countries due to similar skill structures. Especially considering South-South migration mostly occurs between common border countries (Ratha and Shaw, 2007), country specific endowments are expected to be similar. In the case of South-North migration, immigrants are more likely to endow different country specific skills, which make the complementarity more possible.

In Chapter 3, we investigate how immigrants with particular skills influence the employment rate of similar skilled Turks. Furthermore, we question whether skill specific labour supply shocks have an impact on the in-migration and out-migration decision of Turks in Chapter 4.

Apart from economic consequences of immigration in the host country, these inflows may also generate non-economic effects in society. The theory explained above argues that the inflow of immigrants with particular skill endowments will influence natives with that particular skill. From this approach, we can expect that natives with high school diplomas -*ceteris paribus*- should oppose immigrants with high school diplomas as these are competitors in this labour market but should not oppose immigrants with postgraduate diplomas because they are not in a direct competition with this group of immigrants. However, it may not be the case if this inflow generates -for example- cultural concerns in society. In this case, natives -at least some of them- might be oppose to immigrants independently of their skill level. This motivates us to consider non-economic effects of immigration as well.

CHAPTER 2 BACKGROUND: IMMIGRATION IN TURKEY

In this study, we investigate the impact of immigrants on the natives' employment and the response to the immigration through internal migration. Turkey is a country that has experienced different types, or volumes of, in and out migration. Even before the Turkish Republic (established in 1923), Turkish lands had seen many waves of migration movements. The '93 War (1877-1878), Balkan Wars (1912-1913) and then the First World War (1914-1918) caused considerable numbers of people to migrate into Anatolia (Icduygu and Sirkeci, 1999). The establishment of the Turkish Republic has brought with it the concept of a nation-state in contrast to the multinational structure of the Ottoman Empire. Because of the nation-state ideology of the Republic, immigration has mainly covered Turkish and Muslim individuals who returned to Turkey from the Balkan lands (Icduygu and Sirkeci, 1999). The Bulgarian immigration has an important place in the migration history of Turkey. The three waves of migration movements from Bulgaria in 1950-1951, in 1968-1978 and finally in 1989 constituted more than 500 thousand immigrants to Turkey (Cetin,2010; Icduygu and Sirkeci, 1999), and most of these settled in the Thrace region.

These movements of immigrants were not due to economic conditions but were mostly related to political conflicts in the source countries. It should be noted that the reasons for migration into and out of Turkey included population exchange policies, forced migration, political conflicts, and wars in the region (e.g. Greek-Turkish population exchange, forced migration of Bulgarian Turkish population from Bulgaria to Turkey). Besides the historical or traditional immigration movements, starting with the 1980s, the economic prosperity of the country in the area has also pulled economic immigrants (Icduygu, 2005). A considerable number of individuals especially from neighbouring countries (e.g. Iran, Iraq, Moldova, Romania, Bulgaria, the Russian Federation, Ukraine, and Georgia) have migrated to Turkey for employment (Kasli and Parla, 2009). Immigrants consider the pull factors to be proximity, low cost of travel and living, having relatives (Icduygu, 2003), higher wages and better working conditions (Deniz and Ozgur, 2010).

It might be useful to look at the Turkish government's settlement policy to understand the Turkish approach towards immigrants and the determinants of their settlement in the country. Since the ideology of the Turkish Republic played an important role in immigration being used as a tool to shape society, understanding its legislation on the subject may provide crucial insight into the management of migration in Turkey.

2.1. Law of settlement

Anatolian land had experienced considerable emigration and immigration movements as a result of disintegration of the Ottoman Empire and the nationalist ideology of the new Turkish Republic which was established in 1923. The political party that was ruling the country in those years (until 1945), Republican People's Party, specified what kind of society they wished to create: unity in the language, feelings and ideas (Cagaptay, 2002), which suggests a strong assimilation into Turkishness took place. Homogenisation of the population was the aim of the government of the new country. In this homogenisation policy, the Turkish language had an important role to shape society, as well as its ethnicity. The population exchange between Turkey and Greece in 1924 (and previously Armenian deportation in 1915) served this aim. However, a considerable population of religious and linguistic minorities existed in Turkey, about 2 million non-Turkish speaking people out of 13.6 million (Aslan, 2007).

The inflow of immigrants from Greece, Bulgaria and Romania, as a consequence of the treaties between those countries and Turkey, required legislation to manage those population movements towards the country (Cagaptay, 2002). The Law of Settlement was introduced for this purpose. This law was issued in 1934 and "determined the official policy of the population initiated to re-populate Anatolia and re-organize its population structure" (Colak, 2003:11). Definition of an immigrant was also given in law. In this definition, Turkish ethnicity and being attached to Turkish culture were highlighted[3]. Particularly Article 7 (Ibid., p. 4003-4004) demonstrated that immigrants had very limited freedom to choose their place in Turkey. If they were from the Turkish race and rejected the government's subsidy (e.g. house, land), they could move to any place in the country. However, people who were from the Turkish race and received a subsidy; or people from non-Turkish race and did/did not receive a subsidy had to settle in places where the government decided and were not allowed to move somewhere else. For the settlement, the government laid out three zones in Articles 13 and 14, which are Zone 1, for immigrants who were attached to Turkish culture, Zone 2, for relocation and settlement to assimilate into Turkish culture, and Zone 3, no settlement area because of sanitary, economic, cultural, political, military and security reasons (Ibid., p.4004-4005).

As a consequence of this ideology, Balkan Muslims and Kurds, in particular, were spread around the areas dominated by the Turkish speaking population to assimilate their cultures into Turkish culture (Kirisci, 2000; Cagaptay, 2002; Aslan, 2007; Ulker, 2007; Jongerden, 2007).

[3] For the text of the Settlement Law *see* http://www.resmigazete.gov.tr/arsiv/2733.pdf (only available in Turkish).

Until 2000s, the approach of the government in Turkey had not changed substantially. Together with the ruling of the liberal Justice and Development Party (Adalet ve Kalkınma Partisi), reforms on the immigration policy, which are the Law of Settlement in 2006 and the Law on Foreigners and International Protection in 2013 have taken place particularly as a result of the European Union membership process (Icduygu and Aksel, 2013).

Table 2.1 demonstrates numbers and percentages of people who were born in Turkey and abroad from 1935 to 2000. It is obvious from the table that the percentage of the foreign-born population decreased considerably during that period. Almost 6% of Turkey's population was born abroad in 1935 and this decreased to a low of 0.33% in 1975. Since then it has increased to almost 2% in 1990 and slightly decreased again in 2000. Earlier periods might be characterised with considerable population imports of ethnic Turks or Muslims outside the Turkish border, these movements decreased over the years. It should be noted that in this table (and in our analysis) we consider individuals who were born abroad. The population of these ethnicities might have increased (or indeed decreased) over the years, yet, we are not able to identify this increase (or decrease) since there is no particular question asking about ethnicity in the population census. Therefore, the decrease in the share of foreign-born population only means the inflow of individuals who were born abroad into Turkey decreased. In other words, unfortunately, Table 2.1 is not intuitive in terms of the stock of different ethnicities in the country.

Table 2. 1 Population by birth place

		People born in Turkey *		People born abroad *		
Census year	Total	Number	**(%)**	Number	**(%)**	Unknown
1935	16,158,018	15,195,859	94.05	962,159	5.95	-
1945	18,790,174	17,957,558	95.57	832,616	4.43	-
1950	20,947,188	20,180,424	96.39	755,526	3.61	11,238
1955	24,064,763	23,172,925	96.48	845,962	3.52	45,876
1960	27,754,820	26,786,180	96.57	952,515	3.43	16,125
1965	31,391,421	30,482,810	97.12	903,074	2.88	5,537
1970	35,605,176	34,713,754	97.50	889,170	2.50	2,252
1975	40,347,719	40,205,765	99.67	134,746	0.33	7,208
1980	44,736,957	43,863,737	98.06	868,195	1.94	5,025
1985	50,664,458	49,725,325	98.15	934,990	1.85	4,143
1990	56,473,035	55,335,869	97.99	1,133,152	2.01	4,014
2000	67,803,927	66,526,067	98.14	1,260,530	1.86	17,330

Source: Turkish Statistical Institute, population censuses
* Calculation excludes unknown

According to the Ministry of Interior, migration movements into Turkey are as follows:

Table 2. 2 Number of people by selected source countries

Time period	Number of people	Source country
1922-1938	384,000	Greece
1923-1945	800,000	Balkans
1933-1945	800	Germany
1988	51,542	Iraq
1989	345,000	Bulgaria
1991	467,489	Iraq
1992-1998	20,000	Bosnia
1999	17,746	Kosovo
2001	10,500	Macedonia
April 2011- September 2013	500,000	Syria (Updated on 2/2/2015)

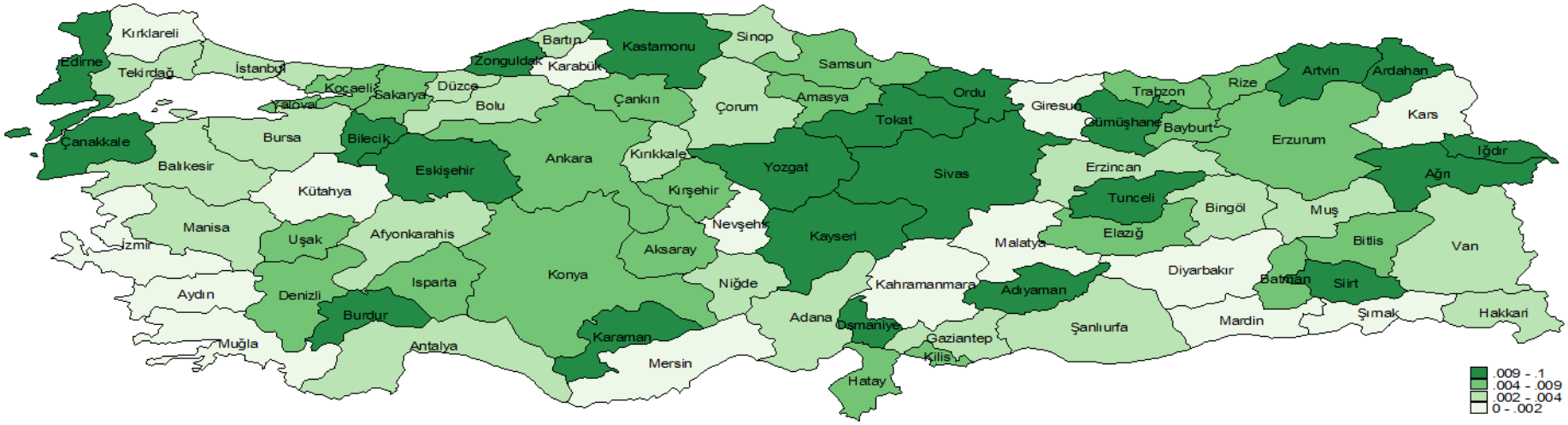
Source: Ministry of Interior, http://www.goc.gov.tr/icerik/goc-tarihi_363_380.

As might be seen from the countries that immigrants have come from, they are predominantly from a Turkish background or Muslim population. Additionally, the reasons for their arrival are often related to political unrest, wars and conflicts. Exceptionally, people from Germany likely to present returnee Turkish migrants. If we consider the foreign-born population in 1935 (i.e. 962.159), almost 40% of that population were born in Greece. Population exchange policies between Greece and the Turkish Republic resulted in this inflow of Turks, who used to live in Greece. Almost all the foreign-born population, which is 4.43% of the country's total population, came from the Balkans between 1923-1945. In the later years, the proportion of foreign-born population continued to decrease as proportion of the total population, even though foreign-born population increased numerically from 800,000s in 1980 to over 1,000,000 in 2000. Increased terror in 1980s, in particular, in East and South-East Anatolia where there are several gates that immigrants may enter into the country was likely to prevent new flows of immigrants from these gates in these years. The decrease in the proportion of foreign-born is likely to be because of this safety concern in affected regions. However, we can clearly say that immigration in this country does not seem to end. Although it decreases at some periods of times, it again increases as seen recent millions of Syrians' inflows. Therefore, it is still worth investigating because we can learn some universal lessons from these supply shocks.

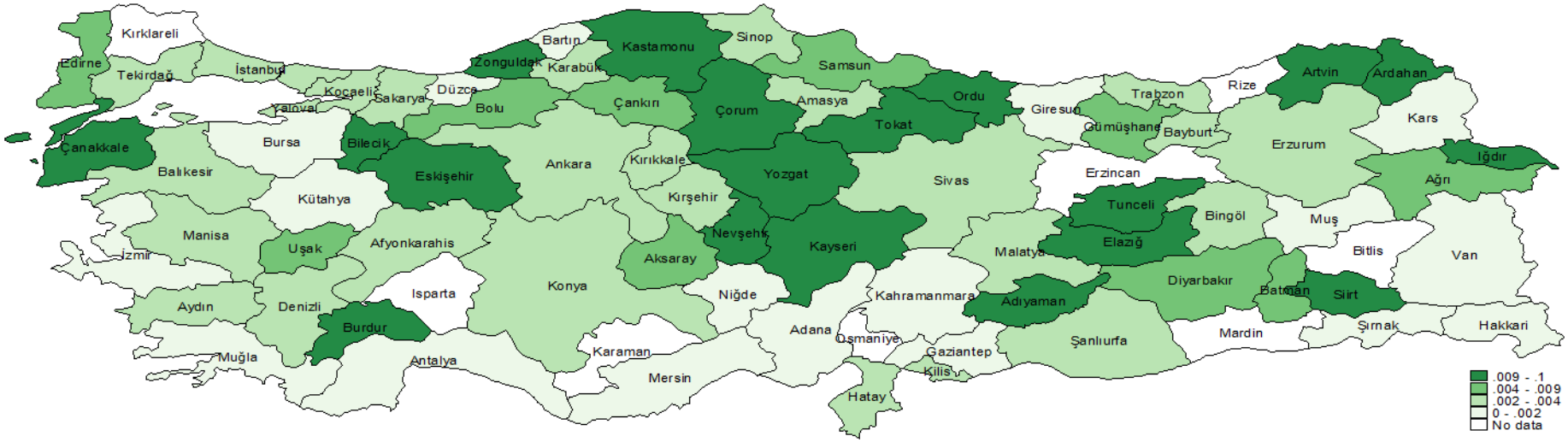
Turkey has hosted immigrants from several different countries of birth, although non-Turkish and non-Muslim population were quite limited due to population homogenisation policies that

took place in the history of the country. Overall, the shares of active, working age and male immigrants from 23 different countries (Afghanistan, USA, Australia, Austria, Germany, Belgium, Bulgaria, France, Netherlands, Iraq, UK, Iran, Switzerland, Italy, Japan, Cyprus, Egypt, Russia, Syria, Saudi Arabia, Yugoslavia, Greece and Other States) in the 5% sample of the 1990 and 2000 population censuses are given by Map 2.1 and Map 2.2 below. Those countries were given as a set of countries that were stated by respondents in the censuses.

Map 2. 1 Immigrant share, 1990



Map 2. 2 Immigrant share, 2000



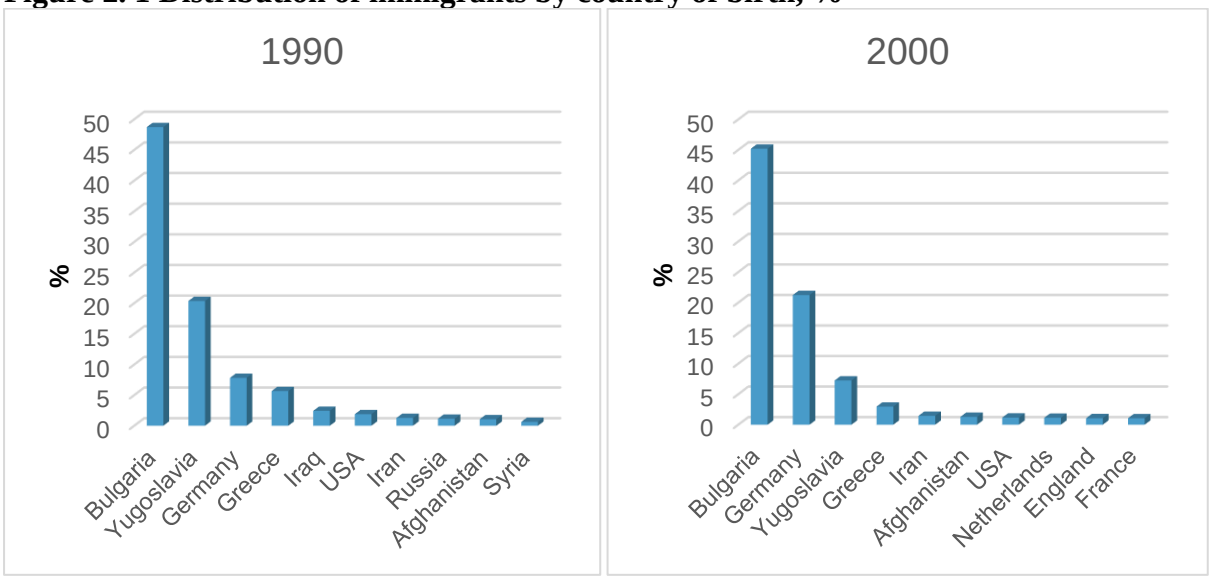
Source: Author's calculations based on 5 % sample of 1990 and 2000 Population Census for active working age male population

Map 2.1 demonstrates the share of immigrants in 1990. Since some of the provinces do not exist in this year, there is no data for them. It is seen that, except a few provinces in the East, immigrants are mostly clustered in Western Turkey. There are two factors affecting the settlement in the West. First, historical settlements via the government channel constitute considerable settlement particularly in the Thrace region which covers Edirne, Kirklareli, Tekirdag and Canakkale provinces in the North-West part of Turkey (hosting mostly Bulgarian immigrants). Secondly, less safety concerns and better weather conditions in the Western part of Turkey have made this region an attractive place for both internal and external immigrants over the years. The sorting of immigrants in the Eastern regions, on the other hand, might be explained by proximity to their home countries. For example, the majority of immigrants in Artvin which is geographically close to Russia, are comprised of Russian individuals (68.97%); the majority of immigrants in Hakkari (66.67%), Mus (93.55 %), Diyarbakir (81.65%) and Mardin (91.60%) are from Iraq, and those living in Van are mostly from Afghanistan (65.38 %). Although in the Eastern provinces there is a strong majority of a particular country of origin, Middle Anatolia and West Anatolia host immigrants from more diverse source countries. Even though we know that Bulgarian repatriates were settled through government authorities in certain places when they arrived in Turkey, we cannot say the same policy applied for every nation migrated into this land. It should be noted that we consider place of birth in the definition of immigrants. So, even though some foreign-born people do not have an immigration status from the government or have been accepted as tourist (e.g. 84% of Russians in Antalya are legally accepted as tourist (Deniz and Ozgur, 2010)), we still consider them immigrants in the sample. In the further analysis, we also provide evidence to compare all samples versus only Bulgarian immigrants (i.e. exogenously distributed population) on the impact.

Map 2.2 shows the distribution of immigrants in the year 2000. Differently than in the previous cohort, we see more focus in the West instead of some more dispersed propensities across provinces. It is worth noting that the dominant group of immigrants in Adana is from the USA. That is not surprising because Incirlik Air Base is located in Adana and primarily used by the US Air Force. This should be the main reason of US born immigrants living in Adana. In our empirical specification, province and time interaction seems to control for this kind of sorting of immigrant groups.

As another component of the analysis, there are 22 different birth countries and one last option that covers other countries, so totally there are 23 birth places apart from Turkey in the data set. Distributions of the immigrants from the top 10 countries of origin over two census years are shown in the Figure 2.1. According to the figure, the majority of immigrants come from Bulgaria (averaging more than 45%) in both years. Germany, Yugoslavia and Greece follow Bulgaria and the rest of the countries have quite a small share in the whole picture of distribution. It is worth noting that there are more European immigrants in 2000. Immigration from Iran, Iraq, Afghanistan and Syria are related to wars or conflicts in those countries.

Figure 2. 1 Distribution of immigrants by country of birth, %



Source: Author's calculations based on 5% sample of 1990 and 2000 Population Censuses for active working age male population

CHAPTER 3 ARE NATIVES DISPLACED BY IMMIGRANTS IN TURKEY? EVIDENCE FROM SKILL-CELL APPROACH

Abstract
This paper investigates how immigration affects the employment outcome of natives in Turkey. We exploit both spatial correlation by using the variation across provinces and regions within skill groups and national level skill-cell approach to see the general impact of immigration. Using population census data for the years 1990 and 2000, we find a very small and statistically insignificant association between the share of immigrants and natives' employment rate at provincial and regional levels; however, the results at national level show that immigration affects natives' employment outcome negatively. There are a couple of important areas this study contributes to a couple of important areas. First, it contributes to immigration literature by investigating immigration into Turkey, a developing country. Secondly, it differs in terms of characteristics of immigrants as they mostly consist of Turkish-background individuals.

3.1. Introduction

Even though some fluctuations in the immigrant numbers occur over time, the share of immigrants across the world increased after 1990 and reached 2.71 per cent in 2000 while the total number of immigrants grew steadily from 92 million in 1960 to 165 million in 2000 across the globe (Özden et al., 2011). In 2017, the number of international immigrants reached more than 250 million worldwide (UN, 2017). Destination countries were not always developed countries. Therefore, immigration into a developing country becomes an important type of migration. The number of immigrants in developed countries in 2000 was more than four times than in 1960; however, immigration into developing countries still dominates global trends numerically (Özden et al., 2011). Asia added more international immigrants (30.4 million) than other regions across the world between 2000 and 2017 (UN, 2017). Bakewell et al. (2009) provides a useful table showing different definitions and the volume of the migration in this context as in Table 3.1.

Table 3. 1 The volume of migration[4]

	Direction of migration (% of global migrant stock)			
	S-S	**N-S**	**N-N**	**S-N**
Development Status (UN)	33%	7%	26%	34%
Income level (WB)	42%	4%	16%	39%
UNDP HDI	45%	4%	14%	37%

Notes: UN defines South countries as countries with low level by considering low level of income, level of human capital and economic vulnerability. World Bank classifies countries with low and mid-income as developing country, so South. UNDP categorise countries according to Human Development Index, so countries with low HDI (<0.5) and medium HDI (≥0.5 and <0.8) to be South and high HDI (≥0.8) to be North (Bakewell, 2009).

Source: Bakewell (2009), p.6

We do not go into much detail about the definitions used by different institutions or which countries are accepted in which categories here. However, we want to emphasize that even though definition or criteria differs across institutions (for example, the World Bank (W.B.) considers income level to categorise countries, while United Nations considers some other indicators as well), South-South migration still constitutes a big share in the global migrant stock. On average, 40% of global migrant stock is directed from South to South, while almost 37% is directed from South to North. This intense movement from South to South makes it worth investigating to understand the determinants and the impact of those movements. It does not have to differ in fundamental ways from South-North migration. Yet, lack of enough evidence limits our view on the subject.

From the individual's point of view, Ratha and Shaw (2007) argue that migration into a developed country seems more profitable since the wage differential between the two countries is bigger; however, the cost of migration might be higher because of the higher rate and stronger enforcement of taxation, and higher travel expenses (i.e. migration into a developing country generally means a shorter distance of travel). Additionally, there is a lower possibility of application of sanctions on employers about opening their doors to illegal immigrants in developing countries (Ratha and Shaw, 2007) and this increases the probability of employment of immigrants in those countries.

We question whether immigrants displace similar skilled natives in a developing country. Yet, the limited number of empirical studies on the field in developing countries do not broadly allow us to identify the impact. Correspondingly, we contribute to the related literature by analysing the case of Turkey as a destination country for several developing countries such as

[4] Data were from 2006 and 2007

Bulgaria and Yugoslavia. From the end of 1980s until the beginning of 2000s, almost one million people migrated into Turkey from nearby countries such as Iran, Bulgaria, Iraq, Bosnia, Kosovo and Macedonia (Ministry of Interior, 2015). The main reasons for those movements were war and internal disorders. Apart from immigration due to political factors, within the last 13 years, nearly 2.5 million individuals got a residence permit in Turkey for the purpose of study, work or others (Ministry of Interior, 2015). Regardless of whether this mobility of individuals is voluntary or involuntary, it is likely to influence the Turkish labour market because the immigrants are potentially additional labour supply in the labour market.

What we learn from the theory is that natives are displaced by immigrants only if their activities are substitutes for each other. So, this prompts us to consider two important issues: first, whether natives and immigrants are substitutes for each other, and secondly, which native is substitute for which immigrant?

In this study, we exploit national level skill-cell approach as discussed in Chapter 1 (see subheading f. Borjas's (1987) model of migration and his extensions). To do this, we attempt to generate the most effective groups of individuals where they can closely substitute for each other to measure how the supply of immigrants across those groups changes the outcome of interest. We investigate how the inflow of immigrants alters the labour market outcomes of natives by exploiting the variation across skill groups over time (i.e. the relative shifts in the labour supply across skill cells). Therefore, this approach provides much more variation in the supply shock (i.e. shocks across education and experience cells) than other approaches that are based on a homogenous population assumption to identify the impact of immigrant inflows on the natives' employment outcome.

In terms of the literature on Turkey, it is even harder to draw a clear conclusion since only few papers (Aydemir and Kırdar, 2011; Ceritoglu et al., 2015; Del Carpio and Wagner, 2015; Akgündüz et al., 2015) have studied how natives' labour market outcomes are affected by the immigration. Besides, these papers analyse only the impact of Syrian (Ceritoglu et al., 2015; Del Carpio and Wagner, 2015; Akgündüz et al., 2015) or Bulgarian (Aydemir and Kırdar, 2011) immigrants. Likewise, they also do not have a common conclusion. This contradictory view of the literature prompts us to find the best way to identify the true impact.

To identify the impact of immigration in different geographic levels of analysis, we first exploit provincial level and regional level analysis over the two census years, 1990 and 2000. In our

dataset, there are 67 provinces and 26 regions. Our findings at the local level show that natives' employment rate is not associated with the immigration into a given locality. However, our analysis at the national level shows that the share of immigrants in a particular skill group is associated with a decrease in the employment rate of natives in that group. The larger impact at the national level is expected because spatial arbitrage diffuses the negative impact of immigrants towards other provinces/regions when the analysis is at national level. Yet, it is much harder to disperse the impact outside the national borders.

This paper reviews the related literature that covers the impact of immigration on the labour market outcomes of natives in general as well as the smaller literature focusing specifically on Turkey. The next section, Section 3.3, presents the empirical methodology, while information on the population census data set which is utilised in this paper and some characteristics of the data are offered in Section 3.4. In Section 3.5, findings of OLS analysis are presented and the further investigation on the sub groups of the sample, in particular, is given in Section 3.6. Section 3.7 provides the findings of IV analysis. Finally, Section 3.8 summarises and concludes the chapter.

3.1.1 Contribution to the existing literature

The analysis in this chapter contributes to the literature in a few ways. First, from a wider perspective, the current chapter provides an example of South-South migration concept in which there is a burgeoning literature. Even though there are a few immigrants from developed countries, immigrants in Turkey dominantly come from other developing countries. Those inflows are often politically driven, instead of being driven by pure economic factors, which is different from the South-North type of migration. Despite the fact that the South-South migration is not a recent phenomenon and as important as South-North migration, the present literature does not provide a large body of research on this phenomenon. In this sense, this study is a valuable attempt to investigate the consequences of South-South migration for the host country, Turkey.

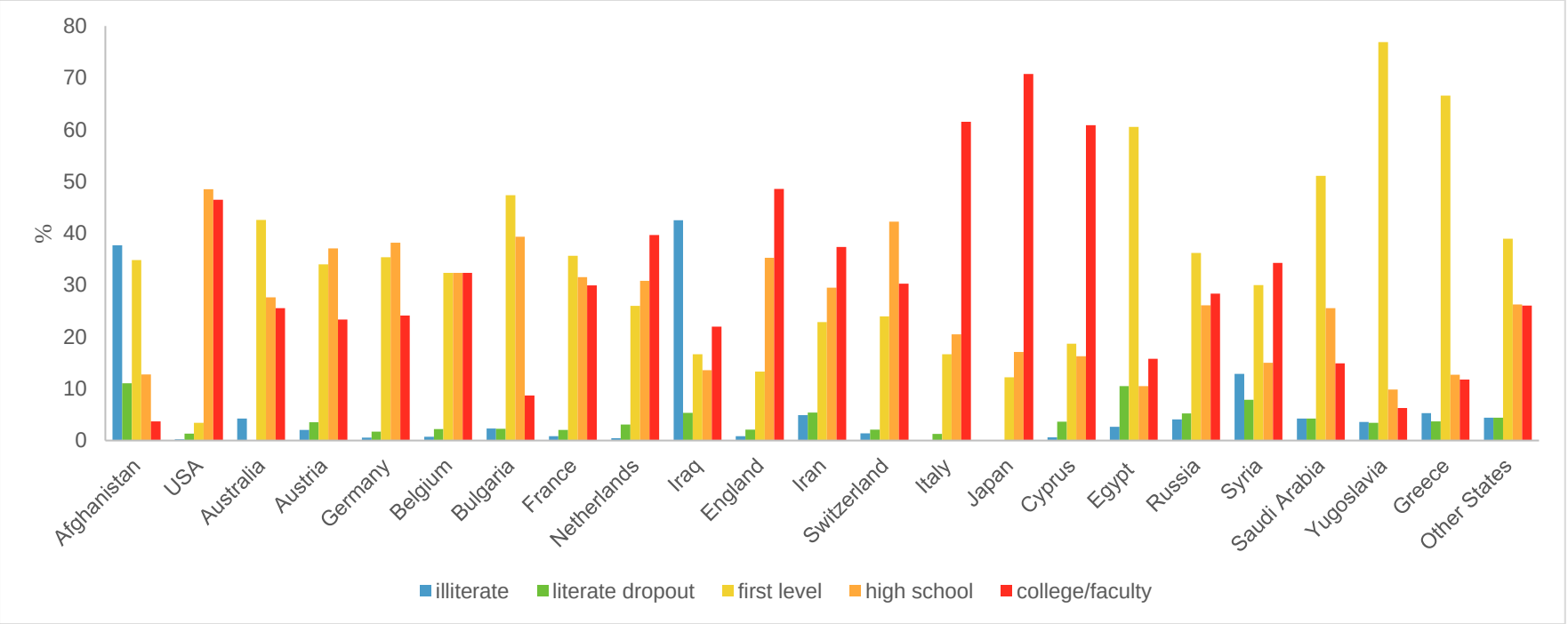
Furthermore, unlike the existing Turkey-specific literature, we look at the characteristics of a whole range of immigrants from several countries of origin, instead of considering only numbers of immigrants in particular regions. Different observable characteristics of immigrants from different countries are likely to change the composition of the skill distribution in the country, and the degree of labour supply shock in the particular skill groups

(see Chapter 1, subheading 1.1.2 for more detail). Hence, if we consider the existence of all groups of immigrants, we may have a clearer picture of the impact. the following figures demonstrate the heterogeneity of skill distribution of immigrants from different origins.

Figure 3.1 presents the percentage distribution of five education levels across different countries of birth among our Turkey sample. An illiterate population seems to have the lowest percentage across education categories, although there are considerable numbers of illiterate people from Afghanistan and Iraq. Data shows that in general individuals from more developed countries such as England, Netherlands, Italy, Japan, Cyprus and USA have a higher level of education. We can also say that individuals with a first level diploma have an important place in this distribution.

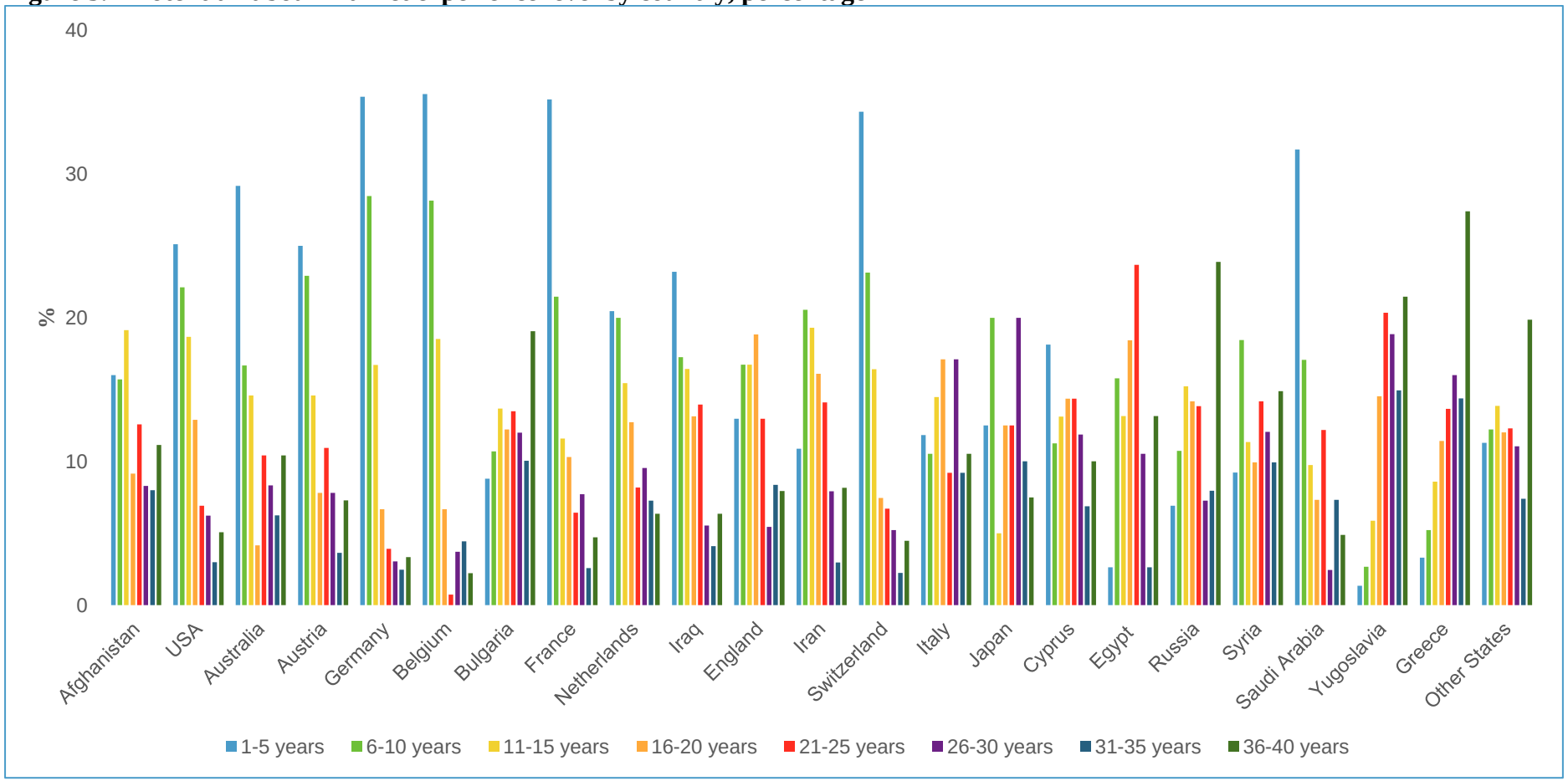
Figure 3.2, on the other hand, shows the level of potential labour market experience distribution across the countries. As in the previous figure on the educational distribution, the distribution of experience categories across countries differs significantly. For example, while individuals from USA, Germany, Australia, Austria, Belgium, France, Switzerland and Saudi Arabia have relatively fewer years of labour market experience, individuals from Bulgaria, Russia and Greece have more potential labour market experience.

Figure 3. 1 Education level by country, percentage



Source: Author's calculations based on 5% sample of 1990 and 2000 Population Censuses for active working age male population

Figure 3. 2 Potential labour market experience level by country, percentage



Source: Author's calculations based on 5% sample of 1990 and 2000 Population Censuses for active working age male population

More importantly, following Borjas, our identification of the impact in our analysis comes from the economy wide skill specific distribution of individuals instead of the geographic distribution of them, which may lead endogeneity bias due to non-random location choice of immigrants. Therefore, our identification allows us to circumvent biased estimates due to local adjustments to immigration and endogeneity concerns. Even though Aydemir and Kirdar (2011, 2017) looked at skill-specific effects, they analyse a simple immigrant group -Bulgarian repatriates. Our study provides a unique example of the national level skill-cell approach that covers a full range of immigrants in the case of Turkey.

3.2. Related literature

This study focuses on how immigrants influence the employment outcomes of Turks in Turkey as an immigrant-receiving developing country. The question of how labour markets respond to immigrant-induced supply shocks is at the centre of the present literature. Both employment/unemployment and wage effects of immigration are investigated in this literature. However, despite a large body of research on the impact of immigration, there is no consensus on the consequences on the labour market outcome.

We find it useful to sub divide developing and developed country cases (as well as Turkey as a separate section) since this may help to identify the differences (if any) between immigration in developed countries and developing countries. This study highlights *South-South migration* that characterises migration between developing countries as this might be a useful way of understanding this type of migration.

3.2.1 Developed country cases

The immigration literature tends to focus on examples from developed countries. One of the earliest and probably most popular study about the labour market consequences of immigration is by Card (1990). Card investigated the effect of Cuban refugees (about 125 000 people entered in 1980) on the Miami labour market in the US. Among those refugees, about half of them located in Miami permanently and this caused approximately a 7 per cent increase in the workforce of the Miami labour market (Card, 1990). This study is a landmark in the natural experiment studies in the literature (i.e. an exogenous shock of Cuban refugees). Card's analysis concluded that the inflow of Cuban refugees had no impact either on wage level or on the employment of non-Cuban labour. Two possible reasons for this absorption of the impact of this particular labour supply shock in Miami were suggested. First, Mariel immigrants might be hired in immigrant-intensive (i.e. less-skilled) industries and those immigrants who

previously worked in those industries moved to other jobs. The second explanation is the internal migration response, i.e. Cuban refugees may have displaced other migrants who would move to Miami within the US. Additionally, the inflow of immigrants in a particular area may increase the demand for goods and services, which offsets the adverse effect of the labour supply shock (Borjas, Freeman and Katz, 1992). Similarly, Altonji and Card (1991) also related change in the natives' wage in a particular area to changes in the share of immigrants in that area and concluded no effect on employment and a small negative effect on the wages, although they consider endogeneity on the location choice of immigrants by using instrumental variable (i.e., lagged share of immigrants).

This type of cross-city approach in which for instance, Miami City analysed via 4 comparison cities (Atlanta, Houston, Los Angeles, and Tampa-St. Petersburg), has been widely criticised (Borjas, Freeman and Katz, 1992, 1997; Borjas, 1994, 1997; Monras, 2015) due to three problems in this type of analyses (Card, 2001): i. out-migration response of natives, ii. potential local demand shocks that attract in-migration through higher wages, iii. intercity trade, which may diffuse this supply shock across the economy. Eventually Card (2001) reassesses the impact in the light of those limitations of his previous work. In his later work, Card focusses on the inflow of immigrants into particular occupation groups in particular cities and expects a decrease in wages and employment rates if a fraction of the population increases in a particular group due to the immigrant influx. In contrast to the earlier study, he accounts for endogenous sorting of immigrants across cities by using past settlement instrument ("past stocks of immigrants in particular locations are good predictors of future flows" Monras, 2015:2). His findings showed a small reduction on the employment rates and wages, although the validity of this instrument is under discussion (validity depends on the condition that national shifts are not serially correlated (Jaeger, Ruist, and Stuhler, 2018)).

Those findings of Card (1990; 2001) and Altonji and Card (1991) do not support the hypothesis that the labour market opportunities of natives in the US are significantly and adversely affected by immigrants. Contrary to them, Borjas et al. (1997) argued that natives might adjust to the impact of the labour supply shocks in a particular locality by moving their labour, which cause downward biased estimates in those studies. Borjas (2003) then suggested an approach in which labour market outcomes were compared across education and experience groups, instead of across cities. This approach avoids across-city adjustments that cause biased estimates since it focuses on the national level but not the local level. The findings of his

empirical work on the US labour market indicated that immigration lowers the wage of competing workers considerably. This finding is also supported by later empirical studies (Borjas, 2006; Borjas, Grogger, and Hanson, 2006; Borjas and Katz, 2007; Aydemir and Borjas, 2007). Furthermore, this approach has been utilised for reappraisal of Card's (1990) study of *Marielitos* by Borjas (2017). The distinction between Card (1990) and Borjas (2017) is that, the latter considered the skill composition of Marielitos, which mostly consisted of high school dropouts (i.e. they increased high school dropout population by almost 20% while general increase in the labour force was 7%). Therefore, Borjas (2017) emphasized this unbalanced labour supply shock requires the investigation of those natives who felt the effect of immigrants the most. His reappraisal highlights that there is a sizeable negative effect of Marielitos on competing US workers and Card's results are sensitive to the choice of control cities.

It is worth noting that the assumption of perfect substitution within education-experience groups on Borjas' studies has also been criticised by some authors (Ottaviano and Peri, 2008; 2012; Dustmann, Frattini and Preston, 2013). Ottaviano and Peri (2012) found small and statistically significant imperfect substitutability of natives for immigrants within the same cell (i.e. education-experience group). In addition, the findings of the analysis on the wage level indicate that, allowing for imperfect substitutability within cell, reduces the impact of immigrants and the impact of immigration on the wage of natives, i.e. immigration increases natives wage by 0.6 per cent. In contrast to this study, Jaeger (2007) and Borjas, Grogger and Hanson (2010) found evidence on the perfect substitution of the same skilled natives and immigrants. Borjas, Grogger and Hanson (2012) revisited the same data as used in Ottaviano and Peri's work. Findings of this study still suggest perfect substitutability, which is quite different from the earlier study. Borjas, Grogger and Hanson (2012) argue that Ottaviano and Peri would get the same results if they re-consider of a few technical problems in their work. Using inappropriate regression weights and unconventional definition of earnings of skill groups (i.e. log mean wage instead of mean log wage) caused the ability to get an imperfect substitution result.

Apart from the US labour market, other developed country labour markets have also been investigated in terms of the impact of immigration. One of the early contributions, Pischke and Velling (1997) argues that the impact of immigrants on the German labour market should be larger than the US labour market due to more rigid wages and the role of unions in the market.

This study also relied on the cross-city comparison as previously done in the context of US. We should note that the authors took into account the endogeneity of the location choice of immigrants and applied the same instrument, lagged share of immigrants, as in Altonji and Card (1991). Their findings indicate that there is little impact of increased immigration on the unemployment. Considering a similar endogeneity issue, Bauer, Flake and Sinning (2013) also applied an IV technique, using the share of old buildings in 1961 as an instrument to identify the effects of immigration on wages and unemployment in Germany. They use a data set that combines individual and postcode level data. Their findings support the hypothesis that rigid wages and the effect of unions eliminate wage adjustments due to immigration, so there is no significant effect on the wage level. Yet, this study found that immigration increases probability of employment of high-skilled natives, which means high-skilled Germans benefit from immigrant influx.

Another Mariel Boatlift style analysis (i.e., quasi-experimental) is by Glitz (2012) in the context of Germany. Unlike Card's study, this exogenous labour supply shock influenced all regions of the country, not a single labour market (e.g. Miami) (Glitz, 2012). He looked at the effect of immigrants, due to the fall of the Berlin Wall, on the unemployment and wages of native Germans. Similar to Borjas (2003), he considers skill specific, but also regional changes in the labour force composition. However, he prefers occupation instead of education on the definition of skill since two different countries' education systems may not overlap. Likewise, he finds that there is a negative impact of ethnic Germans on the employment of native Germans, despite the fact that there is no effect on wages. The lesson that has been learned from those two studies is that immigration does not affect wage level but only employment rate responses to the labour supply shocks. This confirms the rigid wage structure and unions' power on the wage determination in the country. The aforementioned disadvantages of the cross-city studies motivated Bonin (2005) to apply an economy wide skill specific approach to identify the partial effect of immigration on the wage of particular skill groups. By following Borjas (2003), he found a negative effect of immigration in the national German labour market, i.e. immigration lowers similarly skilled native Germans' wage level. Even though this estimate is smaller than the US case, it still provides evidence that the impact of immigration is more visible at the national level. D'Amuri, Ottaviano and Peri (2008) address some existing limitations of Bonin (2005) such as the omission of ethnic German immigrants due to his definition of immigrant in a latter study and he uses a similar education-experience specific exogenous labour supply shock such as German reunification. This study also allows for

imperfect substitutability between natives and immigrants as well as between old and recent immigrants. Their findings do not provide any support for the negative impact on the natives' employment and wages, but they find negative impact of new immigrants on the employment and wages (small) of old immigrants.

Although the UK is one the most common destinations for immigrants (5th destination across the globe, hosting about 9 million international immigrants (UN, 2017)), empirical researches on the impact of immigration does not go back to very early years. Dustmann, Fabbri and Preston (2005) is, to the best of our knowledge, the first empirical investigation on the impact of immigration on the labour market consequences in the context of the UK. This study also provides an example of cross-city style studies in which local changes in the labour market outcome of natives is related with the local changes in the immigrant inflow. The skill group of natives and immigrants is taken into account in the identification (education is used in the definition of skill). Two main problems in these cross-city studies -endogeneity of immigrants' location choice and natives' internal migration response- were addressed. The lagged share of immigrants is used to tackle the endogeneity issue and low internal mobility of natives in the UK quelled the concerns about dispersion of the effect across the economy. The findings of this study do not provide evidence on the significant displacement effect of immigration. The impact on unemployment is negative while it is positive on the wage, however, both are statistically insignificant.

Dustmann, Frattini and Preston (2013) argue that pre-allocation of immigrants into skill groups may be problematic if immigrants downgrade after their arrival. By considering this issue, they use a more flexible model to estimate the effects of immigration on the wage percentiles of natives. Again, they use lagged share of immigrants as an instrument to control for endogenous location choice of immigrants. Their findings indicate a negative effect of immigration at the bottom part of the wage distribution and positive effect at the upper part of the distribution (i.e. immigration decreases the wages of low-waged natives and increases the wages of high-waged natives). This positive wage effect of immigrants is explained by the possibility of receiving less than the immigrants' marginal value product, which might be because of initial mismatch or downgrading of immigrants.

Algeria's independence from France in 1962 (resulting in the inflow of 900,000 people in Southern France) contributes another example of a natural experiment. Hunt (1992) was the first study, which looked at the unemployment and wage effect of that supply shock in France.

She followed Card's study and addressed endogeneity of immigrants' location choice by using an instrumental variable (i.e., climate conditions). Results revealed that repatriates caused an increase in the unemployment of natives and a downward pressure on the wages, although the impact was small. The wage data that she employed did not isolate pre-existing labour and repatriates, which may contaminate the wage estimates (Edo, 2017). Accordingly, Edo (2017) measures immigrant share at the regional level, instead of skill level to identify total effect on wage, but not relative skill specific effect. Since repatriates were ethnic French, he is not much concerned about imperfect substitutability between those repatriates and native French labour. Taking consideration of the wage data and longer time period, he found a positive impact on the unemployment of natives (i.e. inflow of repatriates increases unemployment of natives). With regards to the wage effect, he found a negative wage effect in the earlier time period and a positive effect for the latter. He concluded there was no wage effect of repatriates over the whole period. Similar to the case in France, Portugal has also experienced this type of exogenous inflow of *retornados* (from Angola and Mozambique). Carrington and Lima (1996) analyse the impact of those *retornados* on the labour market in Portugal. In contrast to Hunt (1992), they found a more severe negative wage effect in their district level analysis. However, we should note that, due to data limitations in this study, the authors looked at wages only in the construction industry, which consists of 4.9 per cent of the industry share of *retornados*.

Further European research has focussed on Austria. Winter-Ebmer and Zweimüller (1999) looked at the unemployment risk of the currently employed Austrian workers. They considered potential simultaneity bias on the foreign share in the industry and region and used the instrumental variable technique (in which the instruments were the share of women, the share of blue-collar workers, lagged foreign share) to avoid this bias. Probit analysis reveals a modest impact of foreigners on the probability of native Austrian workers falling into unemployment. Hofer and Huber (2003) do similar industry level investigation for the same case country, Austria. In this study, they found a negative wage effect of immigration only on the blue-collar workers though it is marginally significant.

Longhi, Nijkamp and Poot (2005; 2006) provide a comprehensive meta-analysis technique (i.e. statistical summation of papers in the literature) to 348 estimates for the impact on the wage level and to 165 estimates for the impact on the employment level of natives. Those studies that are included in this meta-analysis are mostly in the context of the US, yet still there are a considerable number of papers from other mostly developed countries. They highlight

heterogeneity across studies in the field. The findings of the meta-analysis reveal small negative effects of immigration on the natives' wage, though the effect is larger in the US than in European countries. On the other hand, the impact on employment is statistically significant but very small in magnitude and the impact is larger in Europe than that of the US. We should note that those two studies review cross-city style studies in the literature.

3.2.2 Developing country cases

Following Card's paper on Marielitos, several authors have been influenced by his approach as given in the developed country cases. This type of events that caused mass migration movements is the case in developing countries as well. One of the countries that experienced massive immigration is Israel. Friedberg (2001) studied the impact of Russian immigrants on the labour market outcome of Israelis. Instead of a cross-city comparison, Friedberg (2001) uses variations across occupations and considers endogeneity, i.e., if immigrants' distribution across occupations is not independent from error term. He highlights that endogeneity issue should not be that serious in the occupational distribution than the regional distribution because immigrants are restricted by their skills to enter particular occupations. The previous occupations of immigrants in Russia were chosen as an instrument to explain causal effect of immigration on the natives' wage. These findings reveal that an increase in employment due to Russian immigrants causes an increase in Israelis' wage within occupation.

Regarding another example of South-South migration, Facchini, Mayda and Mendola (2013) provide an investigation on the impact of immigrants in the South African labour market. Even though it has a quasi–experimental setting (through the fall of the Apartheid regime), this study is different from the Israel case in terms of its methodology. Facchini, Mayda and Mendola (2013) exploit skill specific variation, which is *à la* Borjas analysis. Card's past settlement instrument is used to identify the causal effect. They found a negative effect on employment at the district level and a negative income effect at the national level, which confirms that the dispersion of the impact of immigration into other localities contaminates the effect at the local level.

A further example of South-South migration comes from Costa Rica by Gindling (2009), who examines the impact of Nicaraguan immigration on Costa Rican earnings. This study is another Borjas style analysis, which considers skill (education and experience) specific variation in the distribution of immigrants. Results indicate that there is no significant impact of Nicaraguan

immigrants on Costa Rican earnings. Gindling (2009) argues that contradictory results between Borjas (2003) and this study might be due to time limitation and the small size of immigrant inflows in the Costa Rica case.

In contrast to those studies mentioned above, Del Carpio et al. (2015) find significant positive impact of immigration on the employment level of Malaysian native workers in their analysis. Instrumental variable estimates indicate that for every additional 10 immigrants there is an increase in the employment of natives by 5.2 persons. They suggest that a given relatively lower level of wage through immigration encourages firms to expand their production, so employ more native workers to fulfil that expanded output size. This means firms need more native workers to complement those immigrant workers in the production process. Ozden and Wagner (2014) argue that the existing literature dominantly focuses on the between group substitution (i.e. substitution between natives and immigrants), yet the scale (i.e. output expansion) effect of immigration is ignored. To identify the true effect of immigration, the authors take into account the scale effect of immigration as well as using data from the Malaysian Labour Force Survey for the period of 1990-2010. Their findings show that the scale effect outweighs the substitution effect in the case of Malaysia, which causes demand for the native workers to increase.

3.2.3 Context of Turkey

This study examines the effect of immigration in the context of Turkey. Turkey has been the destination of large cross border inflows as mentioned in the Background hapter. Despite its important position as an immigrant destination, very little is known about the impact on the labour market outcomes of natives. There are only a few recent papers that analyse labour market outcomes of natives, though immigration has a long history in this country. This history is different from immigration elsewhere as it has government involvement and repatriation of Turks, in particular.

Aydemir and Kirdar (2011, revised in 2017) exploit a natural experiment in which the effect of Bulgarian repatriates (in 1989) on the unemployment of natives was examined. The inflow of Bulgarian repatriates into Turkey provides an example of exogenous labour supply shock due to its political nature. Using the 1985 and 1990 Turkish Population Census data, regional variation in this immigration shock was utilised to identify the impact. To avoid a common endogeneity concern in the literature, they use instrumental variable technique (past share of

repatriates is used as an instrument). We should note that this study takes advantage of multiple treatment groups that allow testing of the differential impact on different groups of natives. The findings reveal positive significant effect of Bulgarian Repatriates on the unemployment of natives, i.e. an increase in the share of repatriates caused an increase in the unemployment of native Turks. Aydemir and Kirdar (2017) highlight that the estimated effect is larger when they consider skill groups (according to educational attainment and age groups), which is parallel to Borjas (2003).

The Syrian Civil War in 2011 generated large refugee outflows from Syria. According to the most up to date United Nations data (updated on 13 March 2018)[5], among the few destinations where those refugees are sheltered (e.g. Turkey, Lebanon, Jordan, Iraq, and Egypt), Turkey hosts about 63 per cent of these refugees more than 3.5 million individuals. Therefore, this crisis makes Turkey a valuable case to investigate the effect of this exogenous labour supply shock. The rest of the Turkey-specific studies accordingly focus on the Syrian refugee influx. Akgündüz, van den Berg and Hassink (2015) examine the employment effect of the Syrian inflow (about 560,000 refugees in 2013) through *à la* Card quasi-experimental design (i.e. difference in difference method) by using employment data provided by the Turkish Statistical Institute. In their province level analysis, 6 regions where refugee camps are located are chosen as treatment areas and the rest of the 20 regions of the country serve as the control areas. Their findings are consistent with Card (1990) in showing that the 560,000 Syrian refugees who fled to Turkey within the space of two years had no impact on the employment of Turks. They raise two possible explanations for this finding. First, Syrian refugees are unable to compete with natives. Secondly, firms located in the hosting regions helped to absorb the effect because of their ability to adjust the skill requirements of their labour demand to accommodate the increase in the supply of the low skilled employees.

Another quasi-experimental design is given by Ceritoglu et al. (2015) who use the Turkish Household Labour Force Survey published by the Turkish Statistical Institute. This study takes into account the fact that many of the Syrian refugees live out of camps (three quarters by June 2013); hence, in their design of treatment and control areas, they take advantage of this information. Accordingly, cities with more than 2 per cent refugee population are chosen as treatment areas, while neighbouring cities that are similar in terms of culture, socio-economic

[5] Available from http://data.unhcr.org/syrianrefugees/regional.php

characteristics and economic development, but do not host as many refugees as the treatment cities, are chosen as control areas. The identification comes from the regional variation in the refugee concentration. The authors argue that endogeneity in location choice is not a big concern in the Syrian refugee case in Turkey since the proximity to the Syrian border and refugee camps, which are constructed by government, and other regulations restricted the distribution of those refugees. Findings reveal a positive association between unemployment and refugee influx. Namely, inflow of Syrian refugees increased the unemployment rate of natives in the treatment area compared to the control area. They also look at the labour force participation and the informal employment which refers to being employed without social security coverage. Results indicate that the Syrian refugee influx reduces the labour force participation of natives. Yet, this significant negative impact is driven by the female workforce (there is no significant impact in the male sample). Moreover, that influx in the treatment area decreases the likelihood of having an informal job. Considering the magnitudes of the coefficients (1.1 percentage points went out of the labour force and 0.7 percentage points remained unemployed), results imply that refugee inflow in Turkey caused some of the natives (0.4 percentage points) to switch into a formal job from an informal one, though this is the case only for male labour (Ceritoglu et al., 2015). These results suggest that refugee inflow decreased the employment of female workers and caused male workers to change their sector from informal to formal. Additionally, this paper concludes there is no significant wage effect of refugee inflow.

Del Carpio and Wagner's (2015) study uses more recent data than Ceritoglu et al. (2015) and emphasizes potential endogeneity of the location choice of Syrian refugees due to increasing existence of refugees out of camps (85 per cent in 2014). To tackle this potential endogeneity, the authors apply the instrumental variable technique (where the instrument is the travel distance from region of origin in Syria to region of destination in Turkey). The IV estimates show that the impact of Syrian refugees on Turkish employment is negative. Furthermore, they distinguish the impact on the different types of employment such as formal, informal, regular, irregular, full-time and part-time. They find that the Syrian refugee inflow increased the formal and regular employment of the Turkish, while it decreased informal and irregular employment in a given subregion. This result is consistent with Ceritoglu et al. (2015). Concerning wage level, in the formal sector, there is no wage effect of Syrian refugees. They highlight the large compositional change in the employment structure in the informal sector where refugees are

overwhelmingly employed after the Syrian influx (e.g. fewer female, fewer low educated and fewer part-time) which may reflect the changes in the wage level.

We should note that the data (with the exception of Aydemir and Kirdar (2011, revised in 2017)) used in the previous Turkish literature is not able to identify immigrants' individual characteristics such as their education level, age, occupation, etc. Unlike our study, these studies only count the number of immigrants in particular regions. That is the reason why we do not employ labour force survey data, for example. The most up to date and available data where we can identify either natives' or immigrants' individual characteristics are provided in the Turkish Population censuses (1985, 1990 and 2000) which have been used in this study.

Wage and employment effects of immigration are two core issues that have been studied in the literature and also discussed by public and policy makers. As discussed in Chapter 1, downward pressure on wages due to inflow of immigrants may cause some of natives to fall into unemployment. On the other hand, many other natives may continue to work, yet, for less than what they received earlier. Accordingly, analysing only employment effect of immigration might seem to give only a partial consequence of labour supply shocks. However, Turkish population census data do not provide an information on the wages/earnings of individuals. Therefore, in this study, we only investigate the employment effect of immigrant labour supply shocks.

3.3. Empirical methodology

Cross-city analysis (or spatial correlation method) is one of the most common ways to estimate the impact of immigration. This type of analysis is based on the idea of comparison of two identical labour markets in a country in which one of them receives immigrants. However, this approach tends to underestimate the impact due to endogenous movements between these labour markets. The concern on the endogenous movements has been addressed by focusing skill groups across an entire country instead of a particular region(s). Therefore, in this chapter, we rely on *à la* Borjas country wide skill-cell approach which abstracts geographic considerations as seen in Card and several other cross-city studies.

We consider particular skill groups that are most likely to be affected by the immigrant supply shock. Labour supply shocks are not always identical in terms of the characteristics of labour. They sometimes affect high skilled labour and sometimes low skilled labour. Therefore, a proper estimation of the impact of immigration in the host country labour market requires an

analysis that matches the skills of immigrants with those of native labour who are most likely to compete in the same labour market (Borjas and Monras, 2016).

With regard to the definition of skill, we follow Borjas (2003) which considers both education and experience. As argued in human capital theory, migration is a human capital investment whereby immigrants invest their skills to get a higher present value of the future earnings. Education is not necessarily the only component of skill. Labour market experience is also a crucial element of human capital that reflects on the job training, improvement on language skills, familiarity with hosting culture, etc. Therefore, we exploit both educational attainment and labour market experience to define an individual's skill. It implies that workers with the same level of education are not perfect substitutes unless they also have the same level of experience. We should note that we only look at quantity of experience but not the type or quality of experience because of data availability. Accordingly, we divide our sample into the most comparable units (i.e. skill cells) according to the education and experience.

We use data from the 1990 and 2000 population censuses. Based on the population census data, we have 40 skill cells. The education variable in our data does not present the years of education but the levels of education. There are five categories for education: illiterate, literate dropout, first level graduate, high school graduate, college/faculty graduate. Illiterate refers to no formal education. First level education involves 8 years of schooling, while high school graduation requires 3-4 additional years of schooling. There are also college graduates which require 2 years of education and faculty graduate, which requires 4 years of education. Because it is not separately given in our data across census years, we take faculty and college graduates together. With regard to the second component, experience, we rely on potential labour market experience due to lack of information on actual experience, which is calculated by the number of years since they left education. This variable is presented in 5-year intervals. Thereby, there are eight experience groups: 1-5 years, 6-10 years, 11-15 years, 16-20 years, 21-25 years, 26-30 years, 31-35 years, and 35-40 years. Provided that immigration into those 40 groups with a certain level of education is not balanced across potential experience cells, there exists a great deal of variation in the labour supply shocks. Consequently, our identification comes from the variation across skill groups over time.

As we mentioned in the literature review, this approach has been criticised by some authors (see for example, Ottaviano and Peri, 2008; 2012) due to the assumption of perfect substitutability within the skill group. In the case of the US, this criticism might be valid (even

though Jaeger (2007) and Borjas, Grogger and Hanson (2012) concluded that similar skilled immigrants and natives are perfect substitutes for each other) due to the lack of language ability of Cuban immigrants, for example. Nevertheless, we are not much concerned about this imperfect substitution within group because of the characteristics of immigrants in our sample.

We are not able to capture the impact on wage because population census data does not include wage data. Yet, we investigate the employment outcome of natives due to immigration in this chapter. To illustrate the impact of immigrants in Turkey on the natives' employment outcome within skill group over time, we estimate the following equation:

$$E_{st} = \alpha IM_{st} + s + t + (s\ x\ t) + \varepsilon_{st} \quad \textbf{(3.1)}$$

Population census data allows us to see whether an individual is employed or not. E_{st} is our outcome variable under consideration, which is the natives' employment rate within skill cell. The employment rate of natives is calculated by the total number of employed natives over the total number of the native population. As our main variable of interest, we utilise the immigrant share variable to measure the effect of immigration. With regards to the definition of immigrant, we rely on birth place information of individuals. Hence, an individual is defined as immigrant if he was born out of Turkey. Within this context, immigrant share is calculated as a fraction of immigrants within skill-province-time cell over total local population in that cell although we also consider the aggregate share of immigrants across the country within skill-cell over time. So, the immigrant share is defined as:

$$IM_{st} = \frac{M_{st}}{(M_{st}+N_{st})} \quad \textbf{(3.2)}$$

where $\boldsymbol{M_{st}}$ is the number of immigrants who belong to skill group $\boldsymbol{s}$ in time $\boldsymbol{t}$ while $\boldsymbol{N_{st}}$ is the number of natives who belong to skill group $\boldsymbol{s}$ in time $\boldsymbol{t}$. So, $\boldsymbol{IM_{st}}$ gives the share of immigrants in skill group $\boldsymbol{s}$ in time $\boldsymbol{t}$.

Consequentially, the estimate of the impact is given by $\boldsymbol{\alpha}$ that measures the impact of immigrants on the employment rate of native labour within skill groups. The rest of our controls are as follows: *s* is a vector of fixed effects to control for the group's skill level*;* t is a vector of fixed effects indicating the time. Besides, we also control for time specific attributes in a

particular skill group (s x t)[6]. The aim of including interaction terms is to control for changes in the employment rate of each skill group over time (s x t). More clearly, returns to skill may change over time which makes it necessary to be controlled for. Finally, ε_{st} is random error term.

To uncover the difference between the cross-city analysis and nationwide analysis, we also provide an investigation of the skill specific immigrant supply shock across provinces and regions. We expect to find a larger impact of immigration at the national level as discussed earlier.

Concerning the treatment and management of our data, we should deal with the issue of missing data. Although there are some methods in the treatment of missing data, they all have their pros and cons (see Little (1992) for a review). In this study, we adopt the deletion method which is based on discarding any missing values from the sample, instead of replacing those cells with mean, for example. This method seems more rigorous. Yet, missing data does not present a significant problem in our study because we do not have too many missing values in our data set[7].

Estimates are weighted by the sample size of skill-year at provincial or regional level. The motivation of weighting our estimates is that population size of the provinces and regions varies considerably in our sample (for example, the number of observations in some provinces such as Istanbul, Ankara, Izmir, etc. are bigger than in other provinces). This causes the group-average error term to be highly heteroscedastic. For this reason, weighting might be used as a correction for population-size-related heteroscedasticity in the skill group/province/year error terms. Therefore, estimates that are proportional to the sample size of skill-province groups in each year are likely to be more efficient. Similarly, the regression at the national level is weighted by only the sample size of cells over census years (i.e. number of observations in particular cells might be considerably higher than other cells) as there is no spatial division at this level of the analysis.

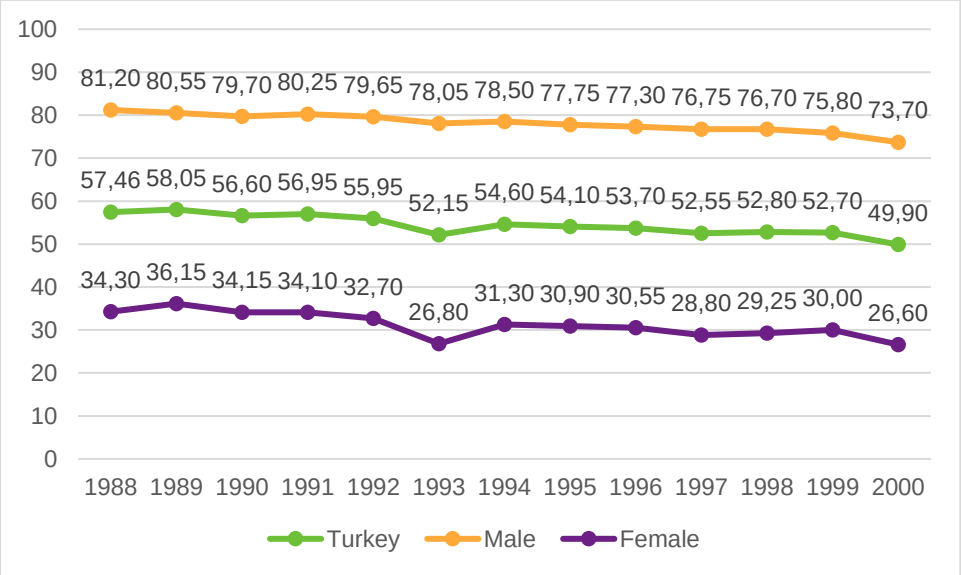
[6] It should be noted that we make an implicit assumption here, which is workers do not switch their cells. It means they are not able to upgrade their educational qualifications.
[7] Missing values count about 5 percent of our effective sample.

3.4. Data description

A randomly drawn 5 per cent sample of the 1990 and 2000 Turkish Population Census data which is carried out by the Turkish Statistical Institute is exploited in this study. Data collection had been done through interviews and there exist three waves of censuses available, 1985, 1990 and 2000[8]. After that, the population census has been done through an Address Based Population Registration System which does not provide information on individual characteristics, which is essential in our study. Our effective sample includes only the working age (16-65) active male population in the labour market, which consists of 770,526 males in 1990 and 944,907 males in 2000. The inactive population such as students, the retired or rentiers are excluded from the sample. So, we excluded students, retired individuals and property owners. The reason why we only consider males is that the labour force participation of females is very low in Turkey[9]. Figure 3.3 shows the labour force participation for males, females and the Turkey average over years. As seen, female participation was 34.30% in 1988 and it decreased to 26.6% in 2000. On the contrary, labour force participation for males is very high in comparison with females, although it decreased over time from 81.20% in 1988 to 73.70% in 2000. Because many females exit from the labour market at least temporarily, e.g., during periods of child rearing, our measure of potential labour market experience will also lead to reasonably accurate approximations only in the case of the male population (Bonin, 2005). Therefore, we only consider the male population in our sample.

[8] 1985 population census data are used to construct instrumental variable as seen in Section 3.7.
[9] Unemployment rates also given in Appendix 1.

Figure 3. 3 Labour force participation rate (%)



Source: Turkish Statistical Institute, http://www.tuik.gov.tr/PreTablo.do?alt_id=1007

The shares of immigrants in this sample are 1.75% and 1.74%, respectively. Those individuals in the sample are divided into education-experience groups. As spatial units of analysis, we consider provinces, regions and national level at the end. The number of provinces is not constant over census years in Turkey. Although there were 67 provinces in 1985, the number of provinces increased to 73 in 1990. Finally, there are currently 81 provinces across the country as observed in the 2000 census. So, to be consistent over time, we define provinces according to the 1985 province boundaries. The second geographic unit of analysis is the region, with 26 regions across the country. Those regions are made by grouping neighbouring provinces together; yet, metropolitan provinces such as Istanbul, Ankara and Izmir are not grouped with any other provinces. Apart from those metropolitan provinces, each region covers 3-4 neighbour provinces in general[10].

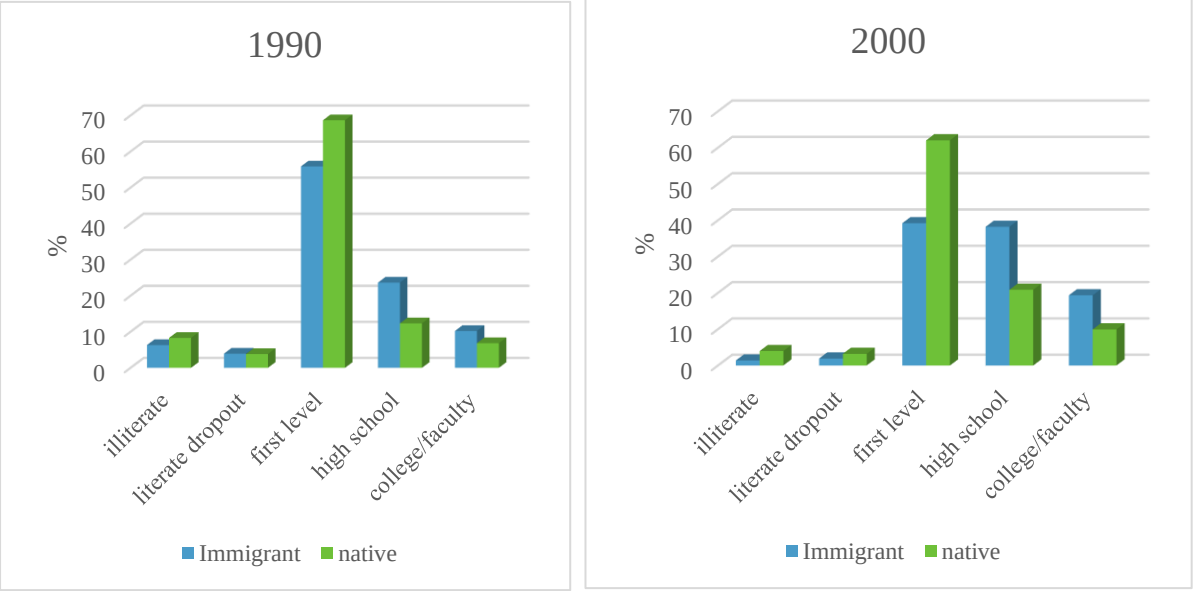
We use the population census data because, unlike labour force survey data, it includes information on the individual characteristics. The labour force survey does not have any information about individuals' nationality/country of birth. Therefore, there is no way of representing immigrants. However, the population census data provides information about country of birth and nationalities that help us to capture immigrants' characteristics. This seems the only way to know about foreigners.

[10] For detailed information, *see* Appendix 1.

One of the components of the measure of skill is education, which is categorised in our data set. Those categories are not the same in all the waves because the education system changed after the 1990 population census. Primary and secondary schools were integrated. Yet, we reorganised those categories according to individuals' educational attainment. So, eventually, education variable is categorized as illiterate, literate dropout, first level, high school and college/faculty. Although college and faculty graduates are divided in the last wave of census, the first two population censuses do not have separate information on them. Thus, college and faculty graduates are taken into account together. Since the population census data does not provide information on individuals' actual labour market experience, we use potential experience to generate education-experience cells. To calculate this, we assume age of entry into the labour market is 15 for a person who has graduated from first level or less, 18 for high school graduates and 23 for college/faculty graduates. As a result of this skill-cell approach, there are 40 cells which include 5 education and 8 experience (five-year intervals) groups. The maximum level of experience is assumed to be 40 years.

Figure 3.4 presents the education level of immigrants and native Turks. The majority is first level educated natives and immigrants across the five categories of education over time. Illiterate and literate dropout males have quite a small share in both groups. It can be said that immigrants are more educated than natives both in the sample of 1990 and in 2000 since there are more high school and college/faculty graduates in the group. It is worth noting that the education level increases over time for natives and immigrants, although that increase is more remarkable in the immigrant group.

Figure 3. 4 Education level of the sample, % total population

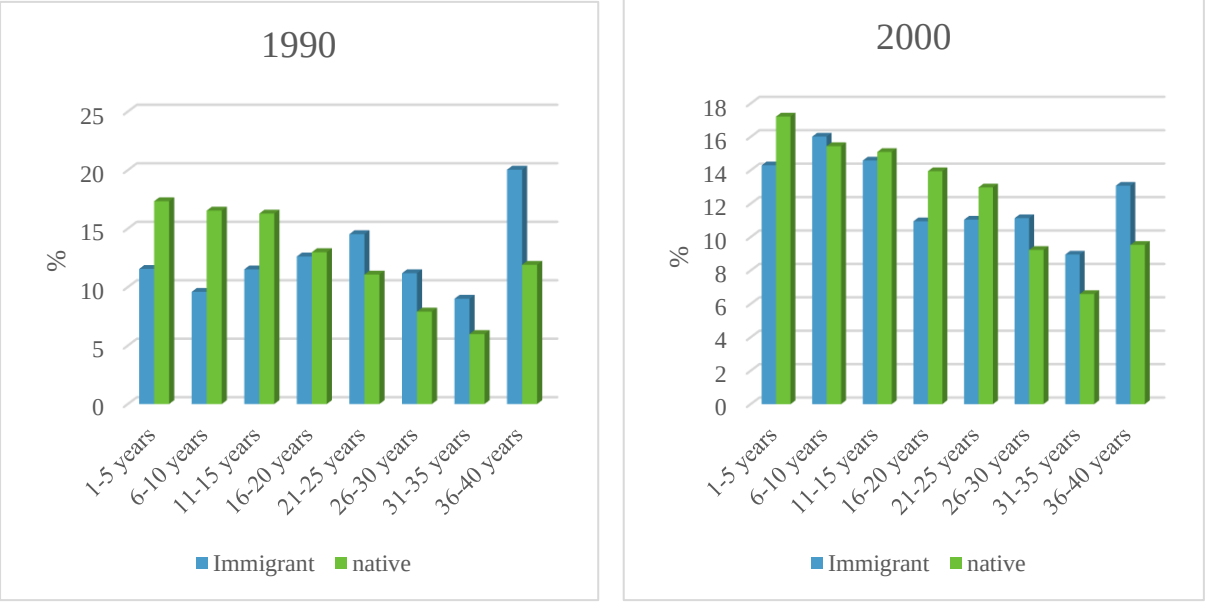


Source: Author's calculations based on 5% sample of 1990 and 2000 Population Censuses for active working age male population

As another component of the skill, the experience levels of immigrants and natives are given in Figure 3.5. The overall distribution of years of experience is similar in the native group over the two census years and the relatively younger population is dominant. There were more immigrants than natives with 36-40 years of experience in 1990. In addition, this is also the category with the largest percentage of immigrants, i.e. the majority of immigrants were older and more experienced. The second largest group of immigrants in 1990 was those with 21-25 years of experience. Most of the immigrants in our sample seem to be of retirement age. Amongst the natives, the less experienced age groups were the largest, i.e. younger and less experienced.

By 2000, immigrants in the less experienced category had increased with the largest group being those with 6-10 years of experience (16%), followed by those with 1-5 years of experience (14%). The 13% of immigrants in the most experienced category remained larger than the 9% of natives in this category.

Figure 3. 5 Experience level of the sample, %

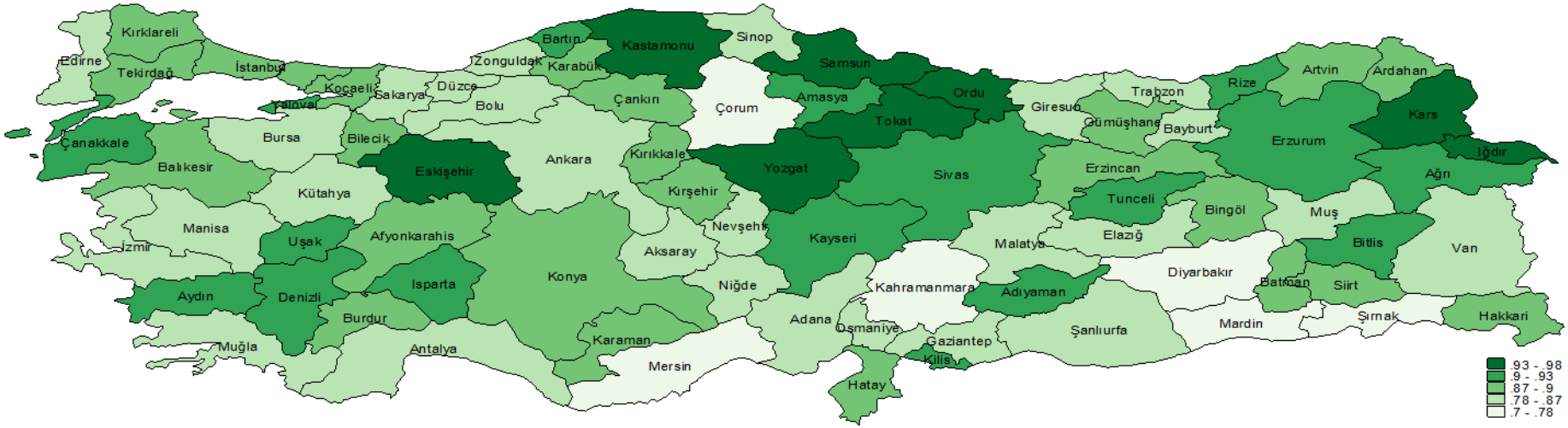


Source: Author's calculations based on 5% sample of 1990 and 2000 Population Censuses for active working age male population

Turning to the employment opportunities, Map 3.1 and Map 3.2 show the natives' employment rate across provinces which is calculated by the total number of employed natives over the total native population. In 1990, except few places in the country, employment rate of natives is higher than 80%. It is clearly seen that employment rate of natives decreased in 2000. As a result of economic crisis in the country, considerable numbers of natives seem to be out of employment. Especially natives in the west part of the country seem to be affected most. Considering existence of mostly private sector in this region, workers in this region are likely to be the most vulnerable group in terms of losing their job.

Map 3. 1 Employment rate of natives, 1990

Map 3. 2 Employment rate of natives, 2000



Source: Author's calculations based on 5% sample of 1990 and 2000 Population Census for active working age male population

The distribution of the employment rate of natives is not much different in 2000 from that of in 1990, as seen from Map 4. However, we can say that the employment rate in the East becomes lower in comparison with the previous census year. We can clearly say that there is a higher demand for labour in the West. Pull factors in the West seem to attract natives to work there.

3.5. OLS results

This section provides our findings on the natives' employment outcome based on the OLS estimation. We first introduce the results of our cross-city analysis. The main variable of interest is the share of immigrants, which captures whether the size of immigrants within a cell influences the employment rate of native males within the skill cell. Therefore, a negative coefficient means that immigration is associated with a decrease in the employment rate of similar skilled natives. Alternatively, if the sign of the coefficient is positive, we can say that immigration is associated with an increase in the employment of similar skilled natives, so they are complements in the production. To capture how each two-way interaction term affects the sign and magnitude of the coefficient of interest, we include them one by one. At the end, column 4 includes all of the two-way interaction terms.

Table 3. 2 Employment effect of immigrants on natives at the province level

	(1)	**(2)**	**(3)**	**(4)**
Immigrant share (skill-groups)	-0.0016***	-0.0017***	-0.0021***	0.0000
	(0.0003)	(0.0003)	(0.0003)	(0.0005)
Skill, province, year	Yes	-	-	-
Skill, province, year, (skill x year)	-	Yes	-	-
Skill, province, year, (skill x year), (province*year)	-	-	Yes	-
Skill, province, year, (skill x year), (province x year), (skill x province)	-	-	-	Yes
N	5,324	5,324	5,324	5,324
R^2	0.7803	0.8030	0.8286	0.9599

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Note: The estimation sample includes only active working age men. Dependent variable is natives' employment rate which is generated as a share of employed natives over the total native population. The regressions include 67 provinces and weighted by the sample size of skill-year-province.

There are 5,324 observations in the province level regression that is represented in Table 3.2. The regression in the first column includes only skill, time and province fixed effects for the changes in the employment rate of the native population over skill groups, province and time. This specification is not able to control for the changes within skill groups over time (skill x

year fixed effects). In other words, we are not capturing changes in returns to skill over years (e.g. employability of high school graduates may change over time), that is to be controlled in the specification 2. Still this specification does not capture the province-skill-specific attributes over time. Concerning employability, provinces offer labour market opportunities that are likely to change over years (province x year fixed effects). For example, industrialisation does not affect all of the provinces with the same degree and constantly over time. While Western provinces have experienced more and faster industrialisation, it is quite low in the Eastern part of the country as a result of geographic location and safety concerns. Therefore, we need to control for province x year fixed effects. In specification 3, we control for that as well though there is no control for sorting of males with certain skills in particular provinces (skill x province fixed effects). Our final specification, eventually, in column 4 covers all two-way interactions (skill x year, province x year and skill x province) that are crucial to identify the skill-specific employment outcome of native males. This explains growing R^2 over the specifications. For this reason, we consider the final specification to explain the impact of immigration.

The signs of the statistically significant coefficients are negative and increase gradually in the first three specifications in Table 3.2. This means that immigrant inflow in a province within skill-cell decreases the employment rate of natives, which implies that the native population and immigrants are substitutes for each other. According to column 3, a 100-percentage point increase in the share of immigrants causes a 0.21 percentage point decrease in the natives' employment rate in a given province within skill cell. However, in our final specification with all two-way interactions (skill x year, province x year and skill x province), we find that natives' employment rate is not sensitive to immigration. The impact is zero and statistically not significant. We should note that the coefficient of interest changes remarkably between third and the fourth columns which draws our attention. Skill x province interaction seems to have a strong effect on the coefficient. This interaction term is included to capture sorting of particular skill groups across provinces. To see the reason more clearly, we exclude Istanbul from the sample, which is a big and very attractive city for several skill groups. The coefficient of interest, in that case, remains negative but statistically insignificant. After that, when we exclude another centre of attraction with very high-level industrialisation, Tekirdag, our coefficient of interest remains negative and statistically significant[11]. This means there exist

[11] Estimation results are not shown here.

considerable skill sorting in particular provinces such as Istanbul and Tekirdag. After all, our findings imply that when we take into account a set of factors that can influence the natives' employment rate across provinces, over time and across skills as well as within provinces over time and across skills, and within skills over time, immigration no longer has a significant effect.

Table 3. 3 Employment effect of immigrants on natives at the regional and the national levels

	Regional level	**National level**
Immigrant share (skill-groups)	0.0001	-0.0109*
	(0.0007)	(0.0055)
Skill, year and all possible two-way interactions	Yes	Yes
N	2,078	80
R^2	0.9764	0.9934

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Note: The estimation sample includes only active working age men. Dependent variable is natives' employment rate which is generated as a share of employed natives over the total native population. The regression at regional level includes 26 regions and weighted by the sample size of skill-year-region. At the national level, there is no spatial division.

Table 3.3 demonstrates estimation results at the regional and the national level. The coefficient of interest at the regional level is not different from that of provincial level. However, the finding at national level implies a negative impact of immigrants on natives' employment rate, even though it is marginally significant. So, an increase by 100 percentage points in the immigrant-induced supply of a skill group, leads to 1.09 percentage point decrease in the natives' employment rate. That means every additional 100 immigrants in Turkey causes one native to fall into unemployment.

It should be noted that this study did not find a significant difference in the impact of immigration at the provincial and regional level. One of the possible reasons for the similar results between province level and regional level analysis might be due to the definition of regions. In our definition, each region involves 3-4 neighbouring provinces as average. Hence, they are still not very large geographic units to make the spatial arbitrage harder[12]. However, the result at the national level is larger in comparison with spatial analysis and statistically significant at 10 per cent significance level. This finding implies that adjustment mechanisms

[12] When we classify the regions broader (i.e. 12 regions instead of 26 regions), employment effect of immigrants becomes larger though statistically insignificant. Estimation results are not given here.

did not help native workers to improve their employment opportunities. In other words, it seems that they responded to this supply shock, yet, they still could not success fully get a job. One of the possible responses is internal migration. Those natives who were affected by immigrants may move into other provinces in search of a new employment opportunity. However, if they were not hired in those new provinces, the impact at the national level would be even larger than that at the province level. In Chapter 4, we investigate whether internal mobility of natives takes place as a response to immigration. Yet, the analysis at the national level provides the general skill-specific impact of immigration in the country's labour market by considering such adjustments.

One might also think whether all of natives who lost their job falls into unemployment instead they exit labour market (i.e. internal migration). In order to understand whether this is the case, we also run an analysis in which we look at unemployment rate of natives as a dependent variable at the national level. Categorical question of "Are you looking for a job?" in the census data is used to define who is unemployed (i.e. if the answer is 'yes', we define that person is unemployed) and then we calculate unemployment rate of natives. Our finding suggests a positive association between unemployment rate of natives and the share of immigrants within skill cell, although the coefficient is not very large and significance level is low as in the previous finding of the employment rate[13].

3.6. Extensions

In the analysis that is presented above, we find a significant impact of immigrants on natives' employment outcome at the national level. For a better understanding of how certain groups of individuals are affected by the inflow of immigrants, we run two sets of regressions. The first set covers different occupation groupings that may show some heterogeneity. It is important because it allows us to see which occupations are affected. The sign and magnitude of the coefficient of interest may be specific to each occupation group. In this context, a negative sign implies substitutability of immigrants for native workers within a particular occupation, so an increase in the inflow of immigrants decreases the employment rate of natives in that occupation. This means similar skilled natives and immigrants in this occupation group compete with each other. If the sign is positive, we can say that immigrants are complements

[13] Results are given in Appendix 1, Table 3. 10.

to natives within that occupation. It might be expected that occupations that require relatively less skill may face more substitutability than ones that require more skill.

A second set of regressions aims to demonstrate heterogeneity across skill groups. As known, in our analysis there are 40 skill groups. Those groups are based on education and experience levels. In this part of the analysis, we divide those groups more generally into four sub-groups: low education which covers individuals with less than high school education, high education which covers individuals with more than high school education, low experience which covers individuals with less than 20 years of potential experience and high experience which covers individuals with more than 20 years of experience. We aim to see the impact on less educated, well-educated, more and less experienced individuals. Since the last wave of immigrants were much younger than the first wave, we can expect that low experience natives may face more competition, thus a larger negative coefficient.

Table 3. 4 Occupational heterogeneity

	Occupation Groups							
	Professional, technical and related workers	Administrative and managerial workers	Clerical and related workers	Sales workers	Service workers	Agriculture, animal husbandry and forestry workers, fishermen and hunters	Non-agricultural production and related workers, transport equipment operators and labourers	Workers not reporting any occupation
Immigrant share	-0.0107	-0.0051	-0.0087	-0.0082	-0.0080	-0.0028	-0.0063	0.0041
	(0.0064)	(0.0055)	(0.0061)	(0.0055)	(0.0063)	(0.0089)	(0.0052)	(0.0089)
Skill, province, year, (skill x year), (province x year), (skill x province)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	80	63	73	80	80	80	80	48
R^2	0.9967	0.9915	0.9979	0.9951	0.9958	0.9900	0.9958	0.9989

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Note: Sample includes only working age active males. Standard errors are reported in parentheses at the national-skill group level. The regressions are at national level and weighted by the sample size of skill-year. Our dependent variable is natives' employment rate.

Table 3.4 presents the results of occupational heterogeneity within skill-cell at the national level. There is an impact, it is negative except the last category which covers workers not reporting any occupation, but the impact is not significant. This result implies that there is no particular occupation affected by these skill-specific immigrant supply shocks.

The second set of regressions is shown in Table 3.5. Low experience natives are the most affected group of natives in terms of the employment outcome. According to the findings, a 100-percentage point increase in the share of immigrants in a given province within skill-cell decreases the employment rate of low experience natives by 2.69 percentage points. 62.15% of our sample is constituted by low experience individuals, which reflects a relatively younger population of the country. This indicates more competition among individuals with a younger age profile (i.e. low experience ones). The sign of the coefficient is negative, and it is only marginally significant for high experience natives as well, though it is smaller than that of low experienced. We could not find any statistically significant impact on education categories. The implication of the findings is that experience is more important than education in the Turkish labour market. The competition is mostly due to different levels of experience and the most vulnerable group is that of less experienced natives (i.e. young population).

Table 3. 5 Heterogeneity across skill sub-groups

	Employment rate of natives			
	Low educated	**High educated**	**Low experienced**	**High experienced**
Immigrant share	0.0019	-0.0094	-0.0269***	-0.0133*
	(0.0108)	(0.0102)	(0.0030)	(0.0072)
Skill, province, year, (skill x year), (province x year), (skill x province)	Yes	Yes	Yes	Yes
N	48	32	40	40
R^2	0.9922	0.9982	0.9988	0.9832

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Note: Sample includes only working age active males. Standard errors are reported in parentheses at the national-skill group level. The regressions are weighted by the sample size of skill-year. Our dependent variable is natives' employment rate. Low education is defined as less than high school education while high education refers high school and more education. On the other hand, low experience means less than 20 years of experience, while high experience means more than 20 years of education.

With regard to the definition of skill, we relied on education and potential labour market experience through the analysis so far. We assume that education received in Turkey and education received from another country is equal. Although, the Turkish government provides

equivalences of the educational attainments for people who received education abroad (as previously explained for the case of Bulgaria in Section 1.1.2.), we still take into account the possible inequality of diplomas received from their home countries. This is the case due to the different educational structures across countries. Two high school graduates from two different countries may not be perfectly substitutable. In other words, skills may not be transferred easily into another country. Even though they are exactly equal to each other structurally, the host country government may not accept diplomas of different countries equally. Thus, this may lead to misspecification of skill groups in the sample. Considering this possibility, we define skill groups by using individuals' occupational background instead of education level. Even if two high school graduates are not substitutable for each other, two computer engineers, for example, are likely to be substituted for each other. Therefore, individuals are divided into skill cells according to their occupations and experience levels. Our occupation groups are as follows:

Codes	Occupational categories
1	Professional, technical and related workers
2	Administrative and managerial workers
3	Clerical and related workers
4	Sales workers
5	Service workers
6	Agriculture, animal husbandry and forestry workers, fishermen and hunters
7	Non-agriculture production and related workers, transport equipment operators and labourers
8	Workers not classifiable by occupation

Table 3. 6 Employment effect of immigrants on natives, skill defined by occupation-experience

	(1)	(2)	(3)
	OLS-province	**OLS-regional**	**OLS-national**
Immigrant share (skill-groups)	0.0002	-0.0001	0.0003
	(0.0004)	(0.0006)	(0.0071)
All fixed effects	Yes	Yes	Yes
N	8,383	3,315	128
R^2	0.9833	0.9923	0.9971

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Note: The estimation sample includes only active working age men. Dependent variable is natives' employment rate which is generated as a share of employed natives over the total native population. The regressions include 67 provinces at province level and 26 regions at regional level which are weighted by the sample size of skill-year-province/region.

Table 3.6 provides findings when we define skill groups according to occupation and potential labour market experience levels. The results are slightly larger than the previous ones with skill defined by education at province and regional level, although there is no significant impact just as before. Interestingly, there is no significant impact at the national level too. However, we should note that there are a few problems with occupational classification of individuals. First, the demand for particular occupations, unmatched skills/ambitions may trigger workers to find a better-matched occupation in their career (Longhi and Taylor, 2013). For instance, if there exists excess supply in an occupation because of immigrant labour supply shock, individuals may switch out of their occupations (Bodvarsson and Van den Berg, 2013). Also, occupation-specific classification of workers may suffer from selection bias since the information on the occupation comes from individuals who are employed, and this measurement does not consider individuals who could potentially be employed in a particular occupation (Bodvarsson and Van den Berg, 2013). Therefore, occupational choice is likely to be fairly endogenous. In order to better understand whether this type of endogeneity occurs in Turkish labour market, we need to have an idea on mobility of Turkish labour. Even though there is no much literature on the mobility pattern in Turkey, to the best of our knowledge, the only study Tansel and Acar (2016) find some evidence. However, this study focuses on formality/informality instead of occupational mobility. Accordingly, they suggest that Turkish labours in general are not much willing to change their employment status, except for unemployed ones. The probability of transition into a formal salaried job (with a raw probability of about 13 %) is higher than into an informal salaried job (with a raw probability of about 3 %). Also, unemployed individuals are the most mobile group in the population and the probability of transition into an informal job (26.4 %) is higher than into a formal one (15.2 %) for unemployed individuals. Most people

stay in their initial statues (with probability of 89.3 % of formal salaried, and 57.7 % of informal salaried). Yet, we are still not able to clearly show the occupational mobility in Turkey. Even though these people remain as formal salaried, they might have still changed their occupations within formal sector.

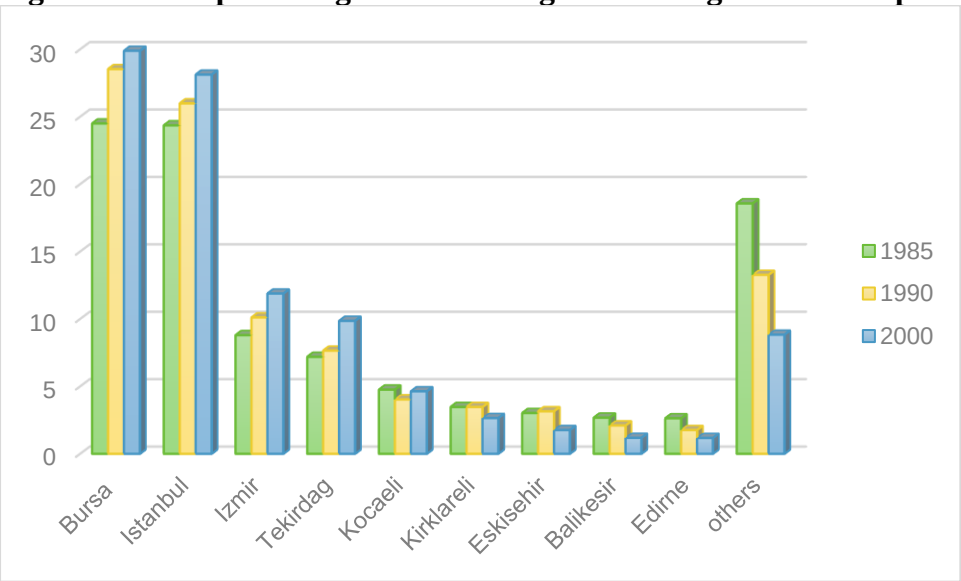
Our data set which is not a panel data set does not allow us to see whether individuals change their occupations over years, or they work in formal/informal sectors. In an extreme example, if our sample consists of only informal sector workers, insignificant impact of immigration on the employment outcome of natives might be due to these workers' mobility behaviour across different employment status in the labour market. Therefore, we are not much confident on our results being robust when we stratify the sample by occupations.

3.7. Potential endogeneity

Through the analysis, we divide the national labour market into smaller geographic units (i.e. provinces and regions) and utilise the variation in the influx of immigrants into those provinces or regions. Concerning the distribution of immigrants into those provinces or regions, we implicitly assume that the distribution is random towards those localities. In other words, it does not depend on the labour market conditions such as higher wages or more employment opportunities in the host regions. With regard to the distribution of immigrants in Turkey, it is hard to say that location choice of immigrants was based on the local demand conditions in the local labour markets since, either it was initiated by political factors (not mostly volunteer economic migration) or government had an important role in the settlements of immigrants through the Law of Settlement as mentioned in Section 2.1. we should however be cautious when applying a migration analysis at local level since non-random distribution of immigrants may change the outcome considerably. Therefore, we consider potential endogeneity in the location choices of immigrants and apply an instrumental variable (IV) strategy to correct the bias if it exists. The pattern of the historical settlements of immigrants from the same country of origin is employed as an instrumental variable for the share of immigrants following Card (2001). Via this instrument, we predict skill-province specific immigrant inflows in 1990 and 2000 by using the fraction of immigrants from a given country of origin in a given province in 1985. Figure 3.6 presents the percentage share of distribution of the biggest group of immigrants, Bulgarians, across certain provinces over 3 census years. It is seen that the share of Bulgarian immigrants is clustered in a few provinces. Their distribution in 1985 is quite

similar to in the distribution in the later waves. Therefore, this supports the hypothesis of the historical settlements of the immigrants from the same country of origin.

Figure 3. 6 The percentage share of Bulgarian immigrants across provinces



Source: Author's calculations based on 5% sample of 1985, 1990 and 2000 Population Censuses for active working age male population

In Turkey, the settlement of immigrants had been intervened by Turkish authorities by referencing to the Settlement Law of 2510 (issued in 1934) (Tokgoz, Erdogdu ve Kaska, 2012; Icduygu, Erder and Genckaya, 2014; Ulker, 2008). The Settlement Law of 2510 was modified in 2006 and later, but the main structure of the law was protected until 2000s. This law defines immigrants as individuals from the Turkish race or those bound up with Turkish culture. They can move easily while others who are not Turkish and not connected to Turkish culture are not accepted as immigrants but foreigners (Icduygu, Erder ve Genckaya, 2014). Those immigrants from the Turkish race or culture were privileged, for example they could acquire Turkish citizenship more easily (Tokgoz, Erdogdu ve Kaska, 2012). Whether they are immigrants or foreigners, the government was active on the settlement as suggested by the zones in the aforementioned law. For example, around 200,000 Bulgarians moved to Turkey between 1950-51, which is one of the waves of migration from Bulgaria, other waves came in 1968-78, and 1989 (Hocaoglu and Mutluer, 2008). They were settled in certain places temporarily, then transferred into appropriate places (mostly Western provinces) that were chosen by Turkish authorities (Colak, 2013). Even before that in the earlier years of the Republic, Thrace (North-West part of Turkey: Edirne, Kirklareli, Tekirdag and Canakkale) and Eastern provinces (e.g.

around 7,000 Afghan immigrants were settled in the villages in Eastern Anatolia (Icduygu and Sirkeci, 1999) places particularly chosen as settlement areas for immigrants (Ulker, 2008). It is important to know how they settled during the earlier periods of migration since the settlements of new waves were mostly in the enclaves where their relatives had formerly located (Kolukirik, 2006; Hocaoglu and Mutluer, 2008.). It is also worth mentioning that the Turkish government considered the availability of the provinces (Geray, 1971) and particularly national security (Ulker, 2008), which played an important role in determining the location for the immigrants.

There are two requirements for an instrument variable to be valid. First, the instrument (i.e. share of immigrants from a given country of origin in a given province in 1985) has to be a determinant of the endogenous variable that it is being used to instrument for (i.e. the share of immigrants from that country of origin in that province in 1990 and 2000). The distribution of immigrants across provinces is likely to be similar to previous distribution since networks, family ties, similar culture, etc. reduce the cost of migration. Secondly, the instrument has to be conditionally uncorrelated with error term. So, A valid instrumental variable should not be correlated with current demand shocks but needs to influence the suspected endogenous explanatory variable.

Applying this instrument, we assume that immigrants from a given country of birth follow a similar pattern that the previous wave the same country's immigrants. If the recent wave does not settle in the same regions where senior immigrants settled, this instrument fails, which means we cannot predict the distribution of these immigrants across the country via their historical settlement. This assumption is likely to hold in our case because governments active role in the settlement and location preferences of immigrants (*see* Figure 3.6 for immigrants from Bulgaria).

We also assume that there is no path dependency in local economic conditions. Let us suppose a case that the first wave of immigrants chose regions where employment opportunities are better and wage level is higher. If local economic conditions persist over time and the later waves settle in the same regions as previous ones, we cannot say that the settlement of the last wave is due to the network not due to the economic conditions in that locality. Therefore, if there is path dependence, we cannot identify the true impact of immigration. To make it clearer -whether there is strong correlation between local demand conditions in 1985 and the share of

immigrants from a given country of birth across provinces in 1985-, we check correlation coefficient between these two variables below:

Table 3. 7 Correlation coefficients between the share of immigrants and GDP across provinces in 1985

	GDP per capita	Immigrant share
GDP per capita	1.0000	
Immigrant share	0.0256	1.0000
	(0.4206)	

Note: Data from 1987 is used for GDP as there is no available data for 1985

We use GDP per capita across provinces as a proxy for local demand conditions. Correlation matrix in Table 3.7 shows that there is no significant correlation between the share of immigrants from a given country of birth in 1985 and local demand conditions in this year. This finding implies that our first wave immigrants did not consider economic conditions in locality where they moved as we argued, which makes us more confident on using this instrument in the analysis.

Finally, our instrumental variable is defined as follows:

$$\mathbf{S_{pt} = \sum_g G\Theta_{gpt-1} M_{gt-(t-1)}} \qquad \mathbf{(3.3)}$$

where $G\Theta_{gpt-1}$ represents the fraction of immigrants who were born in country g and migrated into province p in Turkey in the previous wave, which is 1985 in our case. Besides, $M_{gt-(t-1)}$ represents the number of immigrants from country of birth g between time t and $t-1$ which is the period between 2000 and 1990. Hence, if this domestic market which is province p is not influenced by supply/demand factors, the expected number of foreigners from country of origin g in 2000 would be as $\mathbf{S_{pt}}$.

A rule-of-thumb to assess the relevance of the instruments in terms of their correlation with a single endogenous variable is represented by the first stage F-statistic. If the F-statistic on the joint significance of the instruments is less than 10, then the instrument is weak and the distribution of the two stages least squares estimator is not normal.

Table 3. 8 First and second stages of IV estimate (province level)

	Immigrant share	Natives' employment rate
IV	34.3035***	-
	(1.5939)	
Immigrant share	-	0.0009
		(0.0010)
Skill, province, year, (skill x province), (skill x year), (province x year)	Yes	Yes
F-test	21.83	
N	5.324	5.324
R^2		0.9598
Hausman Test		
F (1, 2543) = 0.49		
Prob > F = 0.4828		

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Note: Sample includes only working age active males. Standard errors are reported in parentheses at the province-skill group level. The regressions estimated at the province level have 5324 observations. The regressions are at province level and include 67 provinces and weighted by the sample size of skill-year-province. Our dependent variable is share of immigrants. Instrumental variable is designed based on fraction of immigrants in a given local market in 1985 cohort from a given source country.

Table 3.7 presents findings of the first stage and the second stage of the IV estimation at the province level. According to the table, the first stage F-statistic is above the rule-of-thumb of 10 in the specification. This suggests that our instrument is strong, and the IV result is consistent with OLS estimates, which suggests that our findings are not influenced by endogeneity. It is worth noting that the coefficient of interest becomes larger though the standard error is also larger in comparison with the OLS.

We also run Hausman test to check the existence of endogeneity. The last row in Table 3.7 displays the result of the Hausman test for the instrument. The test accepts that the OLS and IV estimates are equal when instrument is used. So, carrying out the Hausman test we conclude that our suspected endogenous variable, the share of immigrants in the model is exogenous.

As we said earlier, the Turkish government has control on the settlement of immigrants. The definition of immigrants is clearly given in the Law of Settlement which defines someone as immigrant if that person comes from the Turkish race and culture. The law also states that "Turkish immigrants and refugees shall be settled in the place where their kins and relatives live" (Article 16: G). As previously mentioned, earlier Bulgarian repatriates were settled according to this law and later waves followed a similar pattern on the settlement. However, it is very hard to say the reason for other nations' settlements. For example, the presence of

Russian immigrants in Antalya does not seem to be fulfilled by a government intervention since they are mostly accepted as tourists as previously explained. However, we still estimate two models by separating Bulgarian and non-Bulgarian immigrants, in which one consists of an exogenously located group of immigrants (i.e. Bulgarians) and others that may not be located exogenously. Different results may lead to suspect endogeneity of location choice of other immigrants. Different findings from the instrumental variable estimates imply that immigrants make their location choice according to the other factors such as local demand conditions, but not the historical pattern of the settlement. The following table summarises our findings.

Table 3. 9 The impact of immigration on natives' employment, OLS and IV result

	Only Bulgarian			Only non-Bulgarian		
	OLS	1st stage	2nd stage	OLS	1st stage	2nd stage
Immigrant	0.0011		0.0012	-0.0006		0.0008
	(0.0008)		(0.0010)	(0.0005)		(0.0018)
IV		72.4987***			22.7670***	
		(1.8217)			(1.4686)	
All fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
F-test		30.52			17.38	
N	5,324	5,324	5,324	5,324	5,324	5,324
R^2	0.9599	0.9741	0.9599	0.9599	0.8758	0.9598

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Note: The estimation sample includes only active working age men. Dependent variable is natives' employment rate, which is generated as a share of employed natives over the total native population. The regressions include 67 provinces and weighted by the sample size of skill-year-province.

Table 3.8 presents OLS and IV results at province level for the Bulgarian and non-Bulgarian population. According to this, our findings from only Bulgarian immigrants are quite similar to our previous finding from the whole sample. There is no significant impact of Bulgarian immigrants on the employment rate. Our instrument is strong, that means later waves of immigrants were settled where the previous wave of that nation settled. It is clearly seen that the results are very similar in two groups, non-Bulgarians and Bulgarians who are a relatively exogenously distributed population of immigrants. Hence, we are not much worried about endogeneity due to the location choice of immigrants. For the non-Bulgarian sample, again there is no significant impact of immigrants on the natives' employment rate.

3.8. Summary and conclusion

The aim of the present chapter is to examine the effect of immigrants on the labour market opportunities of local Turkish individuals. The data is drawn from micro-level data files of the

1990 and 2000 Turkey Population Censuses, as well as the 1985 Census to build instrumental variable in the latter analysis. We exploit the skill-cell approach both at the spatial level and the national level. The spatial level analysis which is based on provincial level and regional level is to understand the impact of region-skill specific immigrant inflow on the natives' employment outcome in a given region within skill cell, although the national level skill-cell approach is benefited to show the general impact of skill specific immigrant inflows over census years. We suspect that estimates of the impact of immigration on local employment are likely to be biased since they do account for natives' response to the immigration. Therefore, we employ the national level skill-cell approach by taking into consideration possible adjustments that disperse the impact through the country as argued by Borjas (2003; 2006). As expected, we find very small (close to zero) coefficients from spatial correlation analysis which mean immigration does not have any impact on the employment rate of natives at the provincial and regional levels, while the findings at the national level imply larger negative impacts of immigrants though it is only marginally significant. Therefore, we can say that possible adjustment mechanisms such as internal relocation of the native population are likely to take place.

We also examine whether there is heterogeneity across occupations and skill groups. We could not find any significant occupational heterogeneity. However, we do find a negative and statistically significant impact on the employment rate of low experience natives. This implies that the young population is more vulnerable to immigrant inflows. Moreover, we also check whether the results change if we define skill groups based on occupation instead of education. Yet, we could not find any significant result for this specification, although it is likely to suffer endogeneity bias as the choice of occupation can be affected by demand conditions in the labour market.

As mentioned earlier, one of the assumptions made in the spatial studies is that the distribution of immigrants into localities is random. This is a very strong assumption to hold. To tackle with potential endogeneity in the location decision, the IV technique is commonly used. The determinants of distribution of immigrants in Turkey are quite different from many developed countries. Politically driven immigrant shocks and the government's active role in the settlements of those immigrants make this country special. Even though we have much less concern about endogeneity in the location choice of immigrants due to given reasons, we still provide an IV analysis as a robustness check to convince the reader. We use Card's (2001)

historical settlement instrument. He predicts the distribution of immigrants from each country of origin based on the previous share of immigrants from the same countries of origin. Thereby, this instrument generates variation at the regional level from the variation in the national inflows which makes it less endogenous to the regional labour market (Ruist, Stuhler and Jeager, 2017). Although the validity of this instrument is still under discussion, we rely on the past settlement instrument in our robustness check. If the distribution of immigrants across provinces is related to local labour market conditions, the findings of OLS might be biased. However, we could not find any significant impact from the IV analysis; the result is consistent with OLS though the coefficient and standard error are larger than OLS.

Our finding of the negative and marginally significant impact on the native employment is comparable to those studies that applied skill-cell approach such as Borjas (2003; 2006) in the context of US, and Facchini, Mayda and Mendola (2013) in the context of South Africa. Our finding is consistent with Borjas, though it is smaller in magnitude. However, the latter (i.e. Facchini, Mayda and Mendola, 2013) find insignificant employment effect in South Africa. It is appropriate to compare our study with mentioned studies since both use the same methodological approach. Since Turkey specific studies in the literature do not exploit a similar methodology as this study, it is hard to compare our results with them. After all, more research is needed to understand the impact of immigration in Turkey.

CHAPTER 4 NATIVES' RESPONSE TO IMMIGRANTS IN TURKEY: VOTING WITH FEET?

Abstract
This paper investigates how natives in a developing country respond to immigration, that is, whether they migrate somewhere else internally. We follow Borjas's (2006) methodological framework and use the 1990 and 2000 population censuses for Turkey. Our findings at province level show that immigration is related to a decrease in the in-migration rate of natives into that province, and an increase in the out-migration of natives from that province. Results at regional level are similar to those at province level though there is no statistically significant impact on the in-migration rate of natives. High educated and young natives are found to be the most displaced groups of natives. The impact is concentrated among clerical and related workers and sales workers.

4.1. Introduction

In the previous chapter (Chapter 3), we investigated the employment impact of immigration on natives. We could not find any impact at the provincial or regional levels, but the impact at the national level was negative and significant. That means that native workers in Turkey were significantly displaced by immigrants at the national level. This difference between the provincial and the national results suggests that there might be an adjustment mechanism between provinces or regions that help to absorb the impact of immigration within small geographic units of the country. The internal migration of native workers, which describes natives' cross-province and cross-region movements, is one important response to the immigrant labour supply shock.

In this chapter, we investigate whether natives vote with their feet against the inflow of immigrants into their provinces. If Turkish workers migrated into other provinces to improve their worsening employment opportunities and they failed to find a job, this situation would result in a larger negative impact at the national level.

Turkey has experienced an inflow of people from different countries of origin for several reasons. Native Turks also change their province of residence. The 1990 and 2000 population census data indicate that, on average, 15.65% of the native population changed their provinces within a 5-year interval. The population census data, therefore, suggest that many people in

Turkey are looking for another location. The 2000 population census data also indicated that more than half of those internal movements were related employment rather than any other factors. We question whether this relocation of natives is associated with immigration by using a 5 per cent sample of the 1990 and 2000 Population Censuses that are randomly drawn by the Turkish Statistical Institute.

There are several empirical approaches for capturing the impact of immigrants on the internal migration preferences of natives. However, in this chapter we adopt the skill-cell approach since it allows us to identify the skill specific impact of immigration. Besides, this chapter is motivated by the findings of the previous chapter, that looks at the employment outcome of natives within skill cell. Therefore, the use of the same method of analysis makes the comparison more meaningful.

Our analysis has two parts of investigation. First, we look at how the share of immigrants in 1985 influence migratory response of natives in 1990. Borjas (2006) suggests that immigration decreases the in-migration rate of natives while it increases the out-migration rate by using the skill-cell approach. This approach allows us to compare the impact on competitors. Using Borjas' skill cell approach, our results are consistent with Borjas (2006) though our finding is quite smaller in magnitude. Secondly, we look at long term impact of the share of immigrants in 1990 on natives who moved voluntarily in 2000. As expected, the impact is smaller in magnitude and not statistically significant for out-migration rate. Since 10-year time lag is long enough to neutralise the impact of immigration, we can expect negligible response from natives.

We also investigated other possible factors to explain natives' internal migration. For this purpose, we included income related factors (GDP per capita), family related factors (number of household members and marital status), housing conditions (home ownership), job specific factors (public sector employment) and security in our model to identify whether the inclusion of those factors changes the impact. However, the impact of immigration on the internal migration of natives remains, in each different specification. This implies that native Turks migrate into different localities considering the existence of immigrants.

After all, the results that are presented in this paper provide important insights to understand the internal migration behaviour of natives against immigrants in the context of a developing country. This is not very well known in the related literature. Instead, the existing literature

mainly focuses on developed countries, particularly the case of US (see Borjas, 2006; Kritz and Gurak, 2001; Card, 2001; Card and Dinardo, 2000; White and Liang, 1998). In this study, we contribute to the literature by analysing the provincial migration of natives in a developing host economy, Turkey. Even though there are a few papers investigating natives' internal migration due to immigrant induced supply shock in Turkey, they differ from the point of methodological preference. We prefer to identify the relative impact in particular skill groups (based on education and labour market experience) which has not been attempted yet. Still, it is obvious that the literature, particularly in the context of South-South migration, needs more research.

The rest of the paper is organised as follows: Section 2 provides some background on internal migration in the context of Turkey. Later on, Section 3 gives information on the related literature. The empirical strategy and the model that we use in the analysis are built in Section 4. Two further sections, Section 5 and Section 6 summarize the data and results that we get as a result of our analysis. Section 7 offers some discussion on further investigation of in and out-migration behaviour. In Section 8 we present our instrumental variable strategy to address potential endogeneity as a robustness test. Finally, the concluding remarks are given in Section 9.

4.2. Internal migration in Turkey

Internal migration in Turkey has taken place within different contexts in its history. Migration in the 1950s might be considered as driven by rural-specific factors, it has been related to urban-specific developments until the beginning of 1980s (Icduygu and Sirkeci, 1999). A rapid agricultural mechanization (in the 1950s) pushed people from rural areas due to the fact that capital-intensive agriculture made people redundant (Gedik, 2003; Henderson, 2002; Todaro, 1969). As a result, migration from rural to urban areas became the dominant type of migration in this period. While the proportion of population in cities was almost the same until the 1950s, it started to increase in the later periods as seen from Table 4.1 below. The data in Table 4.1 was obtained from the Turkish Statistical Institute. To clarify the terms used in the following tables, we rely on the Institute's classifications. Accordingly, 'city' refers to province and district centres and 'village' refers to towns and villages. It might be interesting to start with gender distribution in cities and villages. The proportions of male and female distributions are quite close to each other, although the female population is larger in the villages while the male population is slightly more than female population in cities over years. This might be explained by the intensity of female labour in agriculture in the rural areas (see Bozkaya, 2013; Berber

and Eser, 2008) and more employment opportunities for males in the urban areas. If we look at the total shares, we see that the share of population in rural and urban areas has changed considerably. While the population share in the rural areas was 75.78% in the first years of the Republic, that share fell to 34.70% in 2000. This implies that 40% of the population living in villages moved to the cities, which means considerable urbanisation in the country. Apart from rural specific factors, the attractiveness of the urban areas also played an important role to draw people from rural areas. Acceleration in industrialisation led to an increase in the share of industrial income from 14.1% in the beginning of 1950 to 25.7 in 1991, whilst the share of agricultural income decreased to 16% from 42.9% in that period (Bulutay, 1995).

Table 4. 1 Proportion of city and village population, 1927-2000, %

	City			Village		
Census	**Total**	**Male**	**Female**	**Total**	**Male**	**Female**
1927	24.22	26.06	22.52	75.78	73.94	77.48
1935	23.53	24.82	22.29	76.47	75.18	77.71
1940	24.39	26.21	22.57	75.61	73.79	77.43
1945	24.94	26.50	23.37	75.06	73.50	76.63
1950	25.04	26.65	23.39	74.96	73.35	76.61
1955	28.79	30.60	26.91	71.21	69.40	73.09
1960	31.92	33.69	30.08	68.08	66.31	69.92
1965	34.42	36.16	32.62	65.58	63.84	67.38
1970	38.45	40.61	36.24	61.55	59.39	63.76
1975	41.81	43.41	40.12	58.19	56.59	59.88
1980	43.91	45.26	42.52	56.09	54.74	57.48
1985	53.03	54.58	51.44	46.97	45.42	48.56
1990	59.01	60.29	57.70	40.99	39.71	42.30
2000	64.90	65.30	64.50	35.10	34.70	35.50

Source: Population Census, http://www.tuik.gov.tr/PreTablo.do?alt_id=1047

Migration from urban to urban regions became the prominent type of migration in Turkey after the end of 1970s as migration to urban area from rural area decreased to 14.2% from 17%, whereas migration from urban to urban increased to 20.3% from 15.1% (Gedik, 1997). Table 4.2 presents both the number and percentage of Turkish people migrating internally. It can be seen from the table that migration from city to city is the predominant type of migration after the 1970s. This is partly because the population in the rural areas declined as seen from Table 4.1. The movement from one city to another might be explained by the urbanisation levels of cities across the country (Gedik, 1997). Furthermore, the 1980s and 1990s witnessed increasing globalisation, adaptation of market-oriented economy, improvements in communication and transportation, as well as security challenges in the Eastern hinterland (Icduygu and Sirkeci, 1999).

Table 4. 2 Migrated population by places of residence, 1975-2000

Places of residence	1975-1980	1980-1985	1985-1990	1995-2000
Total	3 584 421	3 819 910	5 402 690	6 692 263
(%)	100.00	100.00	100.00	100.00
From city to city	1 752 817	2 146 110	3 359 357	3 867 979
(%)	48.90	56.18	62.18	57.80
From village to city	610 067	860 438	969 871	1 168 285
(%)	17.02	22.53	17.95	17.46
From city to village	692 828	490 653	680 527	1 342 518
(%)	19.33	12.84	12.60	20.06
From village to village	528 709	322 709	392 935	313 481
(%)	14.75	8.45	7.27	4.68

Note: City refers to urban areas such as province centres and district centres, while village refers to towns and villages. So, migration between cities; and between city and village cover following movements:
From city to city;

- ⇨ Migration from province centre to district centre,
- ⇨ Migration from district centre to province centre,
- ⇨ Migration from district centre to district centre,
- ⇨ Migration from province centre to province centre (From the centre of a province to the centre of the other province)

From city (village) to village (city);

- ⇨ Migration from province centre (village) to village (province centre),
- ⇨ Migration from district centre (village) to village (province centre)

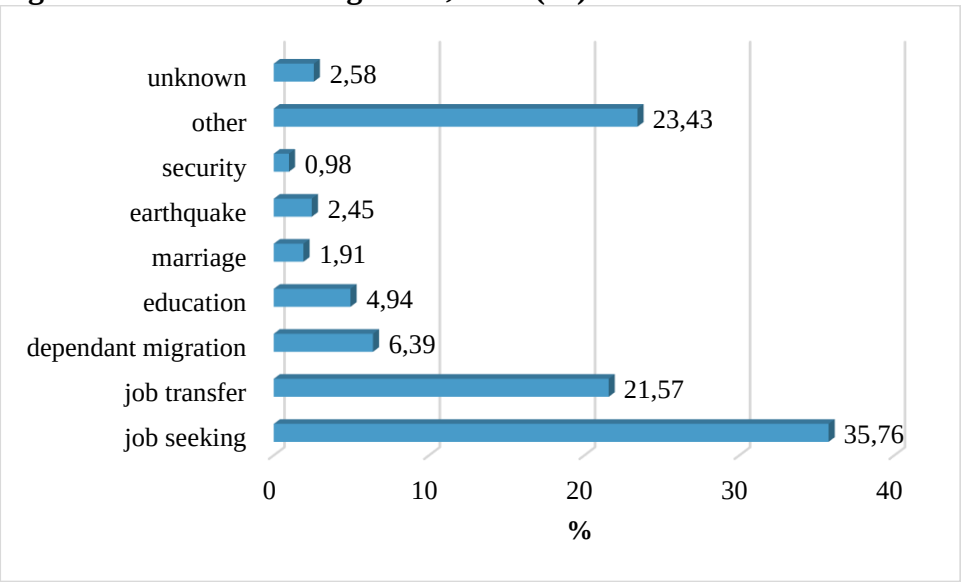
Source: Population Census, http://www.tuik.gov.tr/VeriBilgi.do?alt_id=1067

According to the Turkish Statistical Institute, the definition of migration from city to city covers migration between province centres and district centres; migration between district centres; and migration between provinces. The majority of those people who migrated either into cities or into villages crossed the border of their province of residence. The shares of migrants across provinces over total migrant population were 75.35% in 1975-1980, 75.54% in 1980-1985, 75.24% in 1985-1990 and 71.54% in 1995-2000. It seems a considerable number of residents in the provinces are looking for another province. Under these circumstances, internal migration in Turkey is largely an urban phenomenon (i.e. it is mostly towards cities) and related with crossing province borders. For this reason, we consider provinces as unit of local labour markets which is likely to be more appropriate.

The 2000 population census data shed light on why people have migrated as shown in Figure 4.1. The reasons are classified as follows: job seeking, job transfer, dependant migration, education, marriage, earthquake, security, other and unknown. We can categorise job seeking

and job transfer as employment related migration, likewise dependant migration and marriage, as family related migration. Therefore, the 2000 Turkish population census data tell us that 57.73% of total internal migrants migrated to another province due to employment related factors, which is the largest share. The second largest group includes migrants as a result of family related factors with 8.3%. Education (4.94%), earthquake (2.45%) and security (0.98%) follow with the other reasons (23.43%). Also, 2.58% internal migration is not known why it took place.

Figure 4. 1 Reason for migration, 2000 (%)



Source: Author's calculations based on 5% sample of 2000 Population Census for active working age male population

Figure 4.1 allows us to identify which natives moved as a result of their personal choice and which others had to move. We can say that job seeking seems a choice, but job transfer does not seem to be a personal choice since it is likely to be decided by employer. In terms of our analysis to explain internal migration response of natives to immigrants, it is more appropriate to include natives who moved voluntarily. Across the above categories, job seeking seems the only category reflects individual choice. Unfortunately, the information on migration reason is given only in 2000 census. Therefore, we are not able to examine the impact of immigrants on natives who moved due to individual choices over years. However, we still provide an

investigation using only the 2000 census to show the impact on voluntary migration in one part of analysis.

4.3. Related literature

Even though there is a remarkable clustering of immigrants in the counties (e.g. Cuban immigrants in Miami), how might their impact be negligible in the local labour market where they are clustered? One of the explanations is the diffusion of the effect. Accordingly, if natives relocate their labour and/or capital into other areas which is possibly not affected (or at least marginally affected) by the immigrant labour supply shock, then this response may diffuse the effect into other areas and cause biased estimates within the small geographic areas. However, there is no consensus in the existing literature on whether this hypothesis is valid (i.e. whether immigration in a given locality results in an outflow of natives from that area or slows down/ceases the in-migration of natives into that area to avoid the negative impact of immigrants in the local labour market). Our literature review has sub-sections of US, other developed countries, developing countries and Turkey to make the comparison easier.

Within this context, we aim to contribute to the present literature of native population's responses to immigration by focusing on a developing country, Turkey, where it provides almost an untouched testing ground for the related literature.

4.3.1. Context of US

In the literature, plenty of studies based on the US population census data can be found. In this context, some of the cross-sectional studies suggest a positive association between immigration and out-migration or net migration which is defined as in-migration minus out-migration of natives in the US (White and Liang, 1998; Frey, 1995; Filer, 1992), though different census years, samples and methodologies are utilised. Filer (1992) uses the 1980 census and reports that the arrival of immigrants into a local market, which includes 272 sub-SMSAs of the US, is strongly related with the migratory response of natives in that local market. In other words, the more immigrants who move into a particular labour market, the less attractive that particular labour market is for natives, resulting in negative net migration in that area. He suggests that considering primarily white workers migrate out although wages of white workers are not depressed as much as other ethnic groups (blacks, in particular), this response is likely to be related with the psychic cost of migration.

A similar migratory response is found by Frey (1995) who investigates immigration and out-migration from California's counties by using the 1990 US census. Furthermore, White and Liang's (1998) logit specification provides evidence of more out-migration of natives in states with high recent immigrant concentration by using the 1981, 1984, 1987, and 1990 US Current Population Census data. Although the aforementioned studies suggest that immigration increases the out migration of native population in the case of US, some other empirical evidence, again in the same case country, suggest that the relation between immigration and native population movement is positive or very modest. In their empirical study, Card and DiNardo (2000) analyse the relative growth rate of the native population with regards to the relative growth rate of the immigrant population in 1980 and 1990 by using the skill specific categorisation of individuals to demonstrate the migratory responses of natives to the influx of similarly skilled immigrants. Their findings show that the inflow of immigrants of a particular skill group (i.e. occupation specific) contributes to a small increase in the growth of the native population of that particular skill group. Likewise, Card (2001) evaluates whether there is an intercity mobility of natives to offset impacts of recent immigration in a particular labour market by using the 1990 US census data. His findings reveal that natives' internal mobility is not sensitive to immigration.

Moreover, Kritz and Gurak (2001) in their logistic regression find a mostly insignificant relationship between immigration and the out-migration of native men for the period of 1980-1990 in the US. Bures and Morooka (2004) re-examine the out-migration behaviour of natives based on Kritz and Gurak's (2001) work by using the same data for the same country, US. However, Bures and Morooka (2004) distinguish natives into two groups: "true natives" who have not migrated before and "lifetime migrant natives" or "repeat migrants" who migrated to another state from their state of birth. They find a positive relationship between immigration and out migration of lifetime migrant natives in high immigration states, although the impact is quite low for true natives in comparison with lifetime migrant natives. This study highlights that past migration experience is important to shape future migration behaviour. If someone migrated a lot in the past, he is more likely to migrate now.

A longer time period which is utilised by using decennial US population census data from 1960 to 2000 is investigated by Borjas (2006) who reconciles the wage effect and the internal migration of natives in the same country, yet he exploits skill (i.e. education and labour market

experience) specific shocks in particular groups. This finding demonstrates a reduction in the workers' earnings and a significant internal migration response of natives.

A more recent paper, Crowder, Hall and Tolnay (2011), investigates the neighbourhood level location decision of natives by using data from the Panel Study of Income Dynamics (from 1968 to 2005) linked with the U.S. Censuses. Logistic regression results indicate that an increased share of immigrants is positively associated with the likelihood of moving to a different neighbourhood, although natives are less likely to move if surrounding areas host a large share of immigrants, which means they are not willing to move too far.

4.3.2. Other developed countries

Apart from the case of the US, Hatton and Tani (2005) investigate net inter regional migration for the UK regions. Findings support the displacement hypothesis. Immigration decreases net inter regional migration of natives for both 11 regions and 6 Southern regions, though this effect is mostly statistically insignificant. Notwithstanding, the coefficient of interest is relatively larger in magnitude for 6 Southern regions where immigration inflows are larger. In the model, which includes labour market and housing variables, the coefficient of interest (net migration) becomes larger. It implies that income related factors also influence individuals' migration decisions, as well as immigration.

Aydede (2015) more recently gives more evidence of the displacement effect, studying the Canadian labour market to analyse whether there is a crowding out effect of immigration. Differing to other studies in the literature, he takes into account industry specific immigrant clustering in the local labour market instead of general fractions of immigrants, arguing that if a large share of immigrants exists in an occupation or industry, networking due to similarities among immigrants might be a disadvantage for native born workers in that occupation or industry. His results suggest that native-born workers migrate into places with low incidences of immigrants in their industry. That means that the regions where natives migrate from are characterised by high fraction of immigrants. A most recent study on inter provincial mobility and immigration in Canada is by Beine and Coulombe (2018). We should note that in this study, the authors distinguish between two different migration statuses: temporary foreign worker status that requires a job offer, and permanent immigrant status through the points system that does not require a job offer and favours skilled immigrants. Findings reveal that an

increase in temporary foreign workers in a given province decreases inter provincial migration of natives, while it is not the case for permanent immigrants.

Mocetti and Porello (2010) provide a range of evidence on how immigration affects particular subgroups of native population by age, gender or education in Italy. Although results vary over specifications and subgroups, in the specification that includes the overall sample, there is no significant impact of immigration on net inter-regional flows. However, higher educated natives seem to be affected positively which means a larger share of immigrants is associated with an inflow into that region while it is the opposite for low skilled natives. Those findings are robust when instrumenting immigrant population growth by the distance from immigrants' gateways.

4.3.3. Developing countries

To the best of our knowledge, there is only one developing country case that looks at the internal migration response of natives to immigration. Using the Malaysian Labour Force Survey (LFS) for the years 1990–2010, Del Carpio et al. (2015) in their cross-city style analysis examine the impact of immigration on the interstate migration of natives in Malaysia. The authors take into account endogeneity of the location choice of immigrants and employ the instrumental variable method to avoid that potential bias. The instrument is constructed by using changes in the population and age structure of the immigrant source countries over time, which is similar to Altonji and Card's instrument though there is a time variation in this case. Their findings show that there is a positive relation between immigration and in-migration into a given state in Malaysia. Every 10 additional immigrants in a given local labour market lead to an increase in the native population by around 7.6. Thus, immigration has a positive impact on in-migration of natives in the Malaysian case. As mentioned in the previous chapter, the inflow of immigrants motivates firms to expand the output level at a lower level of wage. Therefore, firms employ more natives to complement immigrants. This increased demand for native workers to fulfil firms' increasing level of output leads to an inflow of natives into a given state.

4.3.4. Context of Turkey

With regard to the existing internal migration literature in the case of Turkey, studies mostly focus on urban-rural migration, migration motivating factors, regional convergence or the labour market outcomes of local people (Gedik, 1997; Filiztekin and Gokhan, 2008; Kırdar and

Saracoglu, 2008; Berker, 2011). Immigrant labour supply shocks, however, are rarely addressed as a determinant of the internal migration decision (see Aydemir and Kirdar, 2017; Ceritoglu et al., 2015; Akgunduz, van den Berg and Hassink (2015). This paper attempts to fill that gap in the literature by providing an insight into whether immigration has an impact on this location decision.

On the determinants of internal migration, Filiztekin and Gokhan (2008) found that income differences between provinces of origin and destination, distance, unemployment rate, human capital (schooling), age and social network are important factors to explain internal migration in Turkey. Terrorism (Karpat Catalbas and Yarar, 2015) and the earthquake of 1999 (Akarca and Tansel, 2012) were found to be other sources of internal migration.

However, to date, there are only a few studies that examine internal native migration in response to immigration in the existing literature. The data used in this literature and its short-comings have been discussed in Section 3.2.3. One of the Turkey specific studies, Aydemir and Kirdar (2017) in their quasi-experimental analysis do not find any impact of repatriates on the in-migration of natives into a given region. Yet, this finding is expected since repatriates arrived in 1989 and data from 1990 is employed to investigate this response, which does not give a sufficient time lag to make a response. Likewise, Ceritoglu et al. (2015) conclude with no impact of Syrian refugees on the inflow and outflow of natives. Del Carpio and Wagner (2015), however, find a negative impact of Syrian refugees on the gross population inflows of natives at the regional level. Similarly, Akgunduz, van den Berg and Hassink (2015) also find a significant negative impact of Syrian refugees on in-migration, while they find a negative but smaller impact on the out migration of natives.

As seen from the related literature, these findings are contradictory across studies. As argued by Wright, Ellis and Reibel (1997), the model specification and chosen sample are very important to evaluate the impact of immigrants on natives' migration. He finds either a positive or no relation between them depending on different specifications. It is also argued that the loss of natives from large metropolitan areas might be due to industrial restructuring rather than competition between natives and immigrants. Additionally, the characteristics of immigrants, e.g. race, culture, wealth might influence the decision of natives about whether to move or not.

4.4. Methodology

Considering the population census data, more than 15 per cent of working age Turkish males migrated into another province. We then expect geographic relocation to be an important

mechanism for Turkish people in dealing with labour supply shocks. For the purpose of identifying this possible response (to immigration), we use three measures. First, we investigate in-migration into a given locality within skill-cell. We question whether the change in the supply of immigrants influences the inflow of natives into the area that is affected by the shock. Secondly, we look at out-migration from the affected area, i.e. whether natives leave the areas in which the share of immigrants increases. Lastly, we look at net migration to see the net effect of immigrants on the migration flows in the areas.

To measure the internal migration of natives we use the census question of "province of residence 5 years ago". Since the province they currently live in is also provided in the census data, we can easily calculate the total number of in/out-migrants and rates. The dependent variables in the analysis include native born individuals to reflect the impact only on the native population. Accordingly, we define someone as in-migrant into current province/region of residence, if they lived in a different province/region 5 years ago, while someone is out-migrant from the original province/region of residence, if they currently live in a different province/region. We calculate in-migration rate and out-migration rate as the total number of in/out-migrants in an area over the average native population in that area over years, as well as net migration rate, which is the difference between the in-migration and out migration rate. With regard to the outflow and the inflow of natives, we expect immigration to decrease the in-migration rate of natives into a given place, and to increase out-migration rate from that place as a result of unwanted competition over resources. We use the share of immigrants in a given place within skill-cell as a measure of immigration. Within this context, the share of immigrants is calculated as a fraction of immigrants within skill-province-time cell over the total population in that cell, as done in the previous chapter.

We rely on the methodology first introduced in Chapter 3, which allows us to identify skill specific supply shocks. Besides the advantages of this particular methodology, we apply it in this chapter for the sake of consistency as well. In Chapter 3, we found a very small relative effect of immigrant supply shock across skill groups and regions and now we question whether this small relative effect is caused by inter-regional skill specific movements. Applying the same methodology is more appropriate to compare the results of the previous chapter.

Our regression model, to estimate natives' internal migration reaction as a response to immigration, is as follows:

$$Y_{spt} = \alpha IM_{sp(t-5)} + s + p + \varepsilon_{spt} \quad \textbf{(4.1)}$$

Y_{spt} presents the outcome under consideration. We consider, in-migration rate, out-migration rate and net migration rate in a given province/region within skill-cell at time t as our outcome variables. $IM_{sp(t-5)}$ demonstrates the share of immigrants in a skill-province cell in the previous time period. Since the stock of immigrants in a particular time should affect the internal flow of natives gradually, not immediately. Therefore, we give some lag between the stock of immigrants and the outcome variable. Hence α measures changes in natives' migration at time t and immigration at time (t-5) in a given province within skill groups. The rest of our controls are as follows: *s* is a vector of fixed effects to control for the group's skill level*;* and *p* a vector of fixed effects to indicate province of residence. The last term in the equation is random component.

4.5. Data

We use a 5% sample of the1985, 1990 and 2000 population censuses' data which are randomly drawn and provided by the Turkish Statistical Institute. Our sample is restricted to working age individuals who are of 16-65 years and we only consider the active male population. Importantly, we divide individuals into groups according to their potential labour market experience and education as a result of our specific methodology. Since potential experience is defined by age minus age of entry into the labour force, females' experience would be mismeasured since they are likely to have more breaks than men. Accordingly, the potential labour market experience is not a very good measure of actual experience for women especially in patriarchal societies. Moreover, the 2000 population census shows that 43.33 per cent of woman migrate internally due to being dependant and marriage. So, they are mostly not prime migrants. We therefore drop women from our sample, so our final sample includes 770,526 men in 1990 and 944,907 men in 2000.

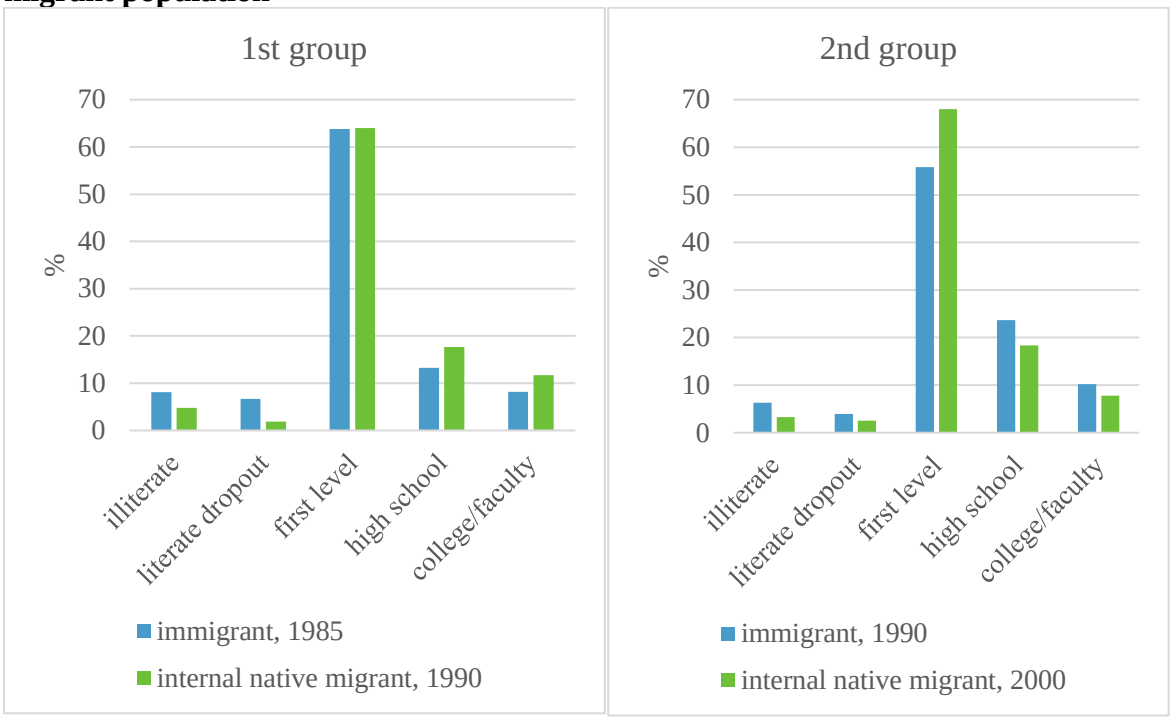
In terms of the timing of the analysis, we use the share of immigrants in 1985 to explain the flow of natives between 1985 and 1990; and the share of immigrants in 1990 to explain the flow of natives between 1995 and 2000. Later part of the analysis is to show relatively longer run effect of immigration as we have 10-year lag in between. Also, in this analysis, we consider only natives who migrated somewhere else voluntarily, in other words, their decisions reflect personal choices. Therefore, only Turkish males who moved somewhere else for job seeking are considered in this part of the analysis. However, rest of the investigation is based on the

first part which uses the share of immigrants in 1985 to explain the flow of natives between 1985 and 1990.

We define someone as immigrant if he was born out of Turkey. The shares of immigrants are 1.75% in 1990 and 1.74% in 2000. In the census, place of residence is given for both the time of census and five years prior to the census on the basis of province. So, we define a native as an internal migrant if his current place of residence is different than the previous place of residence. Therefore, share of internal native migrants who changed their province within a 5-year time period are 16.20% and 15.01%, respectively. We divide these men into skill and province specific groups. With regard to their place of residence, we use the province they live in. To be consistent over censuses, the number of provinces is restricted to 67.

In the definition of the skill groups, the education and experience variables are used as in Chapter 3. The two graphs below show the skill levels of internal native migrants and international immigrants. According to Figure 4.2, both amongst the immigrants and the native migrants, the smallest percentages are literate dropouts followed by illiterates. In the first group which refers to the sample used in the first part of the analysis, there are marginally more internal native migrants with the first level education than those of immigrants in 1985, and the percentage of high school graduates is slightly higher for natives in this group. The percentage of college and faculty graduates seems to be almost the same for migrant natives and immigrants. In the second group which refers to the second part of analysis covering only voluntary migration , the education levels of both groups increased, although immigrants are more educated than internal native migrants, with a higher percentage of high school and college/faculty graduates.

Figure 4. 2 Education level of the sample, % of the total immigrant/internal native migrant population

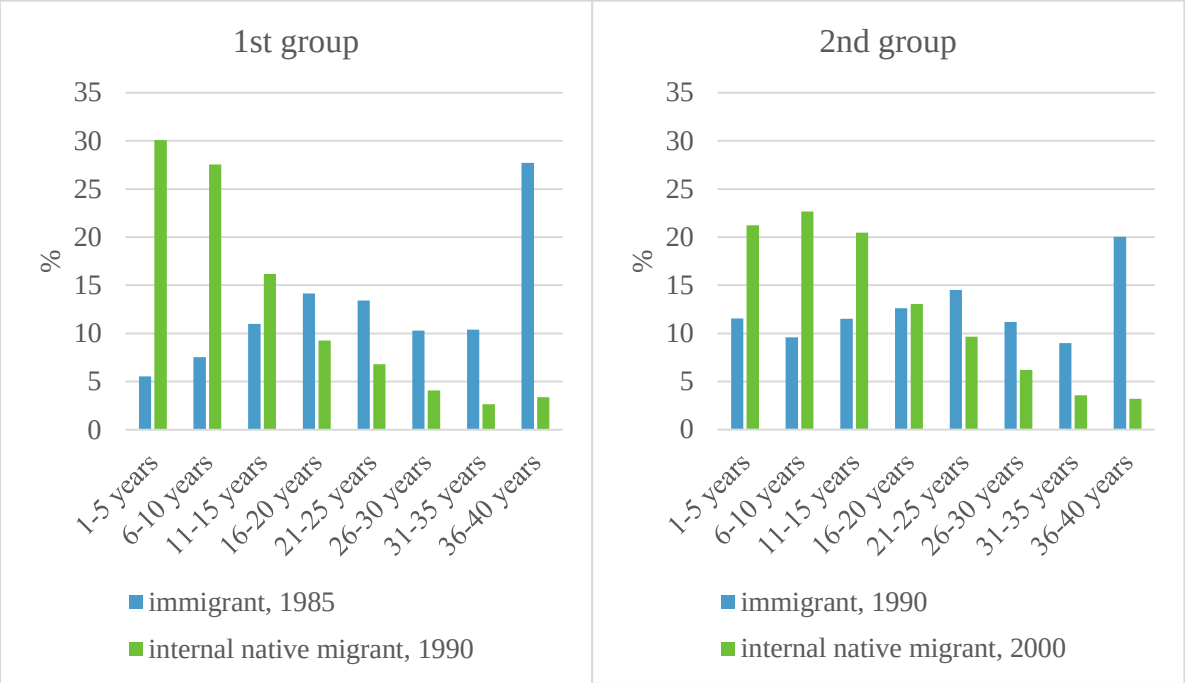


Note: These figures only include working age active males. Internal native migrants are defined as the number of native population who changed their province of residence within 5-year time period. Immigrants are defined as the number of individuals who were born outside of Turkey. Internal native migrants in 2000 are only volunteer migrants.

Figure 4.3 demonstrates the potential labour market experience levels of each group over the two census years. In the first group, internal native migrants are mostly clustered in the first three groups which have less than 16 years of experience. In terms of immigrant population, the distribution is almost the opposite. The largest group of immigrants is those with 36-40 years of experience which is the highest tail of experience categories with 27.7 per cent. This group is followed by those with 16-20 years of experience with 14.14.

In the second group, natives with less experience had decreased with the largest group being those with 6-10 years of potential labour market experience (22.66%), followed by those with 1-5 years of experience (21.23%) and 11-15 years of experience (20.45%). In the group of immigrants, those with less experience had increased. The largest category was still the same as in the first group, the category of 36-40 years of experience with 20,03 per cent in the total immigrant population, it decreased from 1985 to 1990. Therefore, we can say that immigrants are relatively younger, i.e. less experienced in the second group than those in the previous census year.

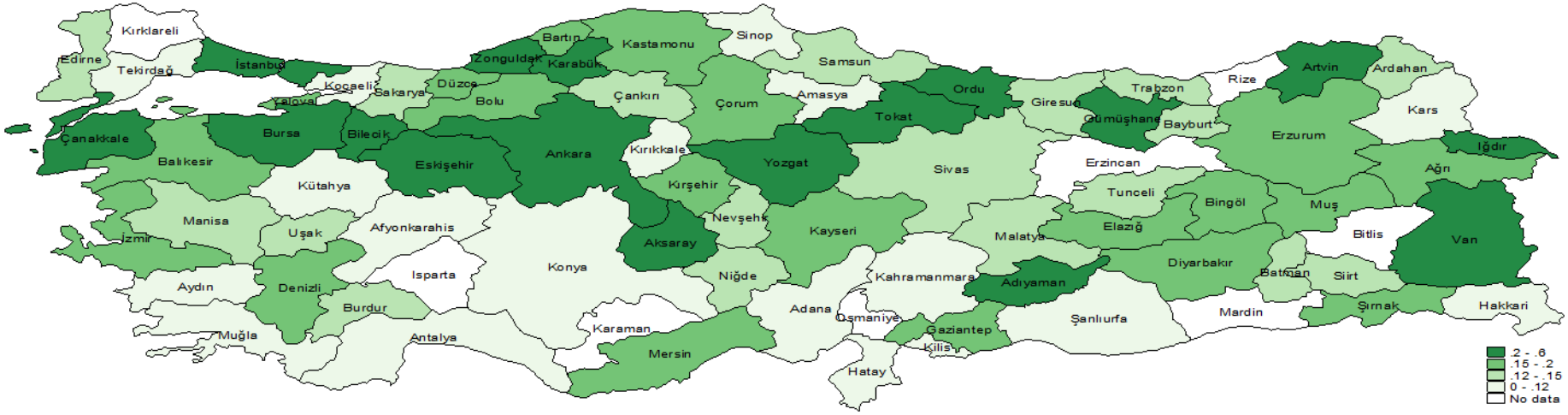
Figure 4. 3 Potential labour market experience level of the sample, % of the total immigrant/internal native migrant population



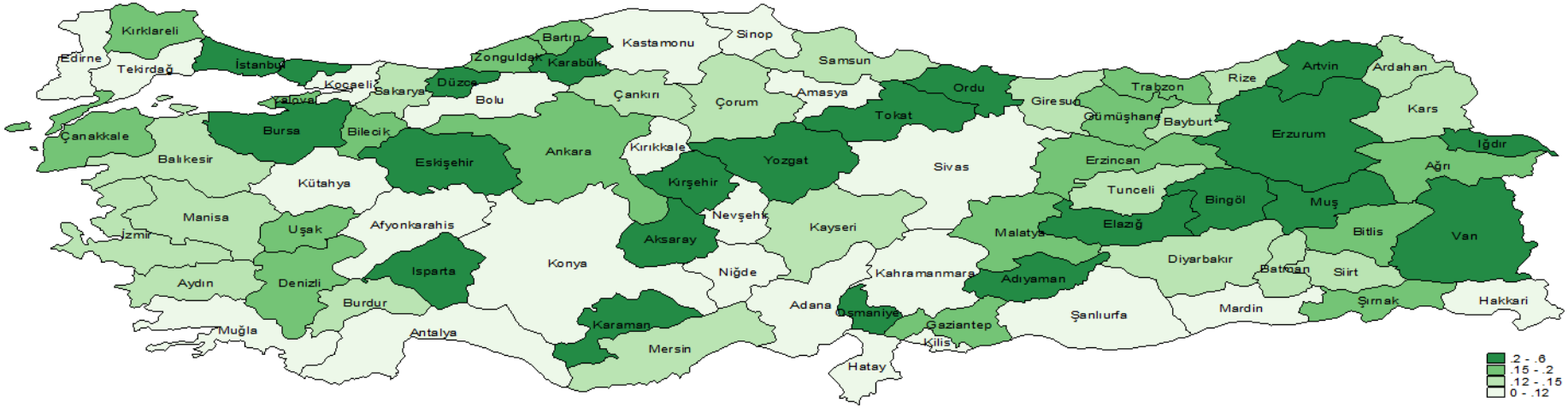
Note: These figures only include working age active males. Internal native migrants are defined as the number of native population who changed their province of residence within the 5-year time period. Immigrants are defined as the number of individuals who was born outside of Turkey. Internal native migrants in 2000 are only volunteer migrants.

Our analysis is based on the province level data. We define provincial borders according to the 1985 province boundaries. Thereby, there are 67 provinces in each wave of the census. The maps below show share of immigrants in the total population, in-migrant natives and out-migrant natives for the years 1990 and 2000.

Map 4. 1 In-migrant natives, 1990



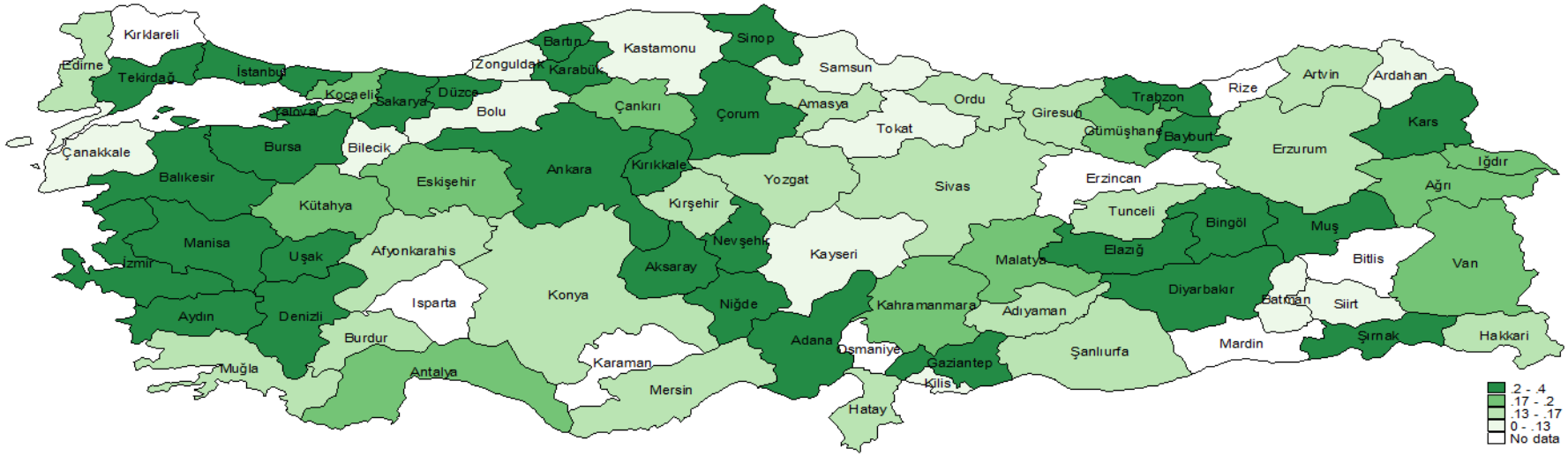
Map 4. 2 In-migrant natives, 2000



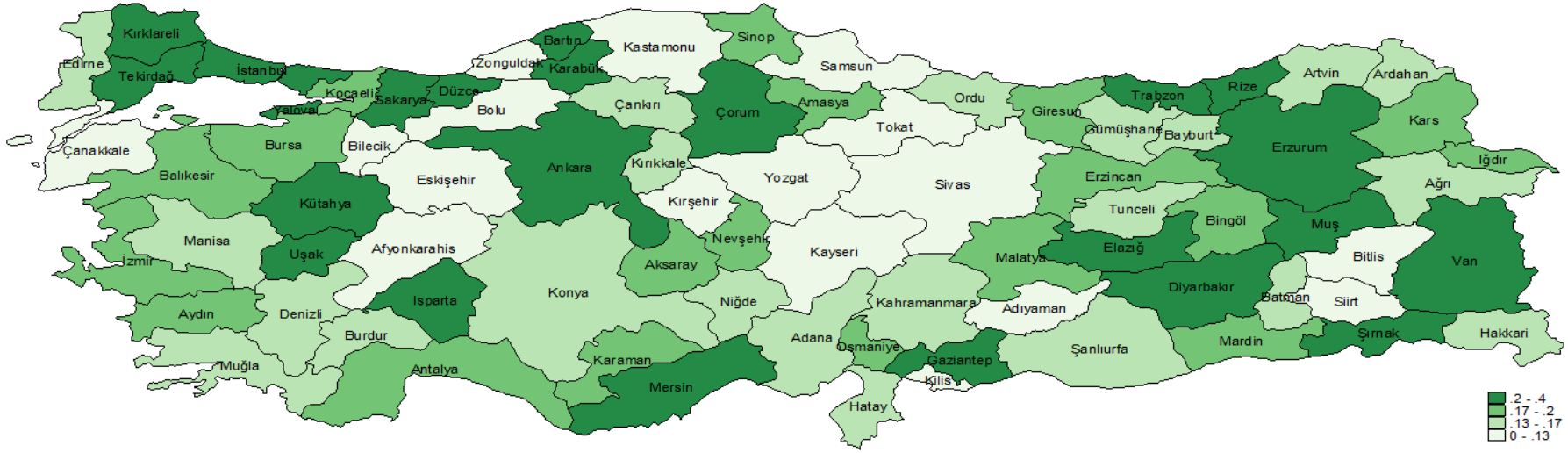
Source: Author's calculations based on 5% sample of 1990 and 2000 Population Census for active working age male population

Map 4.1 and Map 4.2 show the distribution of in-migrant natives over the 2 census years. In-migrants into a province refers to individuals who used to live in a different province in Turkey 5 years ago. According to the distribution of the native in-migrants, it is hard to say that there is regional sorting. It seems they are spread over the country although there are relatively more in-migrants in the Western part, especially in 1990. However, in 2000 relatively more native in-migrants are focused in the Eastern part. The 2000 population census data shows that 21.57 per cent of the total population migrated into another province due to job transfers. Considering there is less existence of private sector in the East, the reason behind this movement might be government related job transfers (such as teachers or security forces) to the Eastern provinces.

Map 4. 3 Out-migrant natives, 1990



Map 4. 4 Out-migrant natives, 2000



Source: Author's calculations based on 5% sample of 1990 and 2000 Population Census for active working age male population

Map 4.3 and Map 4.4 demonstrate the distribution of out-migrant natives in Turkey. Provincial out-migrants refer to individuals who live in a different province than their province of residence 5 years ago. While there is considerable out-migrant Turks in the Western Turkey in 1990, this concentration almost disappeared in the following decade. We also see some focus of out-migration in the Eastern part of Turkey in both years, though this concentration was lower in 1990.

Increased terror in East and South-East Anatolia especially after the middle of 1980s caused unavoidable out-migration from affected regions (Ozdemir, 2008). Hundreds of villages (697 villages during the period of 1990 and 2000) were completely emptied by the country's security forces leading to around 300 thousand out migrants in the conflict between the PKK and the Turkish Army (Yucesahin and Ozgur, 2006). However, this is not the only reason of migration for those provinces.

4.6. Results

In this section we analyse natives' internal migratory behaviour. First, we investigate whether an immigrant supply shock in a given province is related with lower in-migration into that province. Later on, we look at whether the immigrant supply shock in a province is related with outflow of natives from that province. On the other hand, we also consider if there is internal migration within larger geographic units. To examine this, we employ a regional analysis that covers 26 regions of Turkey.

4.6.1. In-migration rate, out-migration rate, and net migration rate

The in-migration rate of natives refers to a fraction of natives belonging to a particular skill group migrating into a given province. We calculate the in-migration rate as follows:

$$In-migration\ rate_t = \sum\left(in-migrant\ Turkish\ population_{t-(t-5)}/TPd_t\right) \quad \textbf{(4.2)}$$

So, the in-migration rate is the proportion of total natives that have moved into the area. TPd_t presents the total Turkish population in the destination area where in-migrants live in time t. The coefficient of immigrant share demonstrates how the share of immigrants in a province changes natives' in-migration rate into that province. A negative correlation means that immigration decreases in-migration of natives into a given province from other provinces. From a labour market competition point of view, *ceteris paribus*, this means that the supply of substitute workers (immigrants) generates competition between substitute natives and immigrants, therefore reducing in-migration into that local market. On the contrary, if those

workers (immigrants and natives in that market) are complements, *ceteris paribus*, this supply shock is expected to cause an increase of in-migration into that local labour market, resulting in a positive sign of the coefficient of interest. However, in-migration into a province may not necessarily be strongly related with job seeking activities/labour market competition. Instead, it might be related with natives' personal preferences as well (i.e. if natives do not like immigrants, they may prefer provinces which present national identity instead of a multi-cultural atmosphere), which will be investigated in the next chapter.

The out-migration rate, on the other hand, is used to demonstrate whether natives in a given province within skill group move out of that province if the share of immigrant increases in that province. The following equation shows the calculation of the out-migration rate:

$$Out - migration\ rate_t = \sum\left(out - migrant\ Turkish\ population_{t-(t-5)}/TPo_{t-5}\right) \quad \textbf{(4.3)}$$

The coefficient of the share of immigrants demonstrates how immigrants affect the movement of natives out of that province. $TPo_{t\text{-}5}$ in denominator presents total Turkish population where migrant natives used to live in time t-5. Similar to previous implications mentioned above, negative correlation means that immigration decreases the rate of out-migration of natives from that province within the skill-cell (i.e. from a labour market point of view, those natives and immigrants are complements). Alternatively, if the relationship is positive, according to the labour market competition approach, those natives and immigrants are substitutes for each other and competition between them produces higher out-migration of natives from the local labour market. In other words, a higher share of immigration in a given province displaces natives. However, as we mentioned earlier, this displacement might be due to *'dislike of immigrants'*, although we do not capture that impact in this chapter.

Finally, the net migration rate measures the difference between the in-migration rate and the out-migration rate. The model captures the net effect of immigrants on the natives' internal migratory behaviour. If we observe a negative coefficient of immigrant share on the net migration rate of natives, this would mean that immigrants displace natives in a given local market within skill cell. It might seem unnecessary to have a net migration analysis since we have either in-migration or out-migration. Nevertheless, we include net migration as well because it allows to see *the net effect*.

Results of the province level analysis is given in Table 4.3. Accordingly, in the first column, we present the impact of immigrants on the in-migration rate of natives into a given province.

The coefficient of interest is negative and statistically significant at 1 per cent significance level. This implies that when the share of immigrants increases in a given province, inflow of immigrants into that province decreases.

Table 4. 3 The impact of the share immigrant on the natives' in-migration, out-migration and net migration rates, 1990

	in-migration	**out-migration**	**net migration**
Immigrant share (1985)	-0.0088***	0.0016***	-0.0104***
	(0.0014)	(0.0006)	(0.0013)
Skill and province fixed effects	Yes	Yes	Yes
N	2,621	2,621	2,621
R^2	0.7414	0.9140	0.5677

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Note: Sample includes only working age active males. Standard errors are reported in parentheses at the province-skill group level. The regressions estimated at the province level have 2,621 observations. Dependent variables are in-migration rate of natives, out-migration rate of natives, and net migration rate of natives, respectively. The regressions are at province level and include 67 provinces and weighted by the sample size of skill-province.

In the second column, we see finding of out-migration rate, in other words, how the share of immigrants in a given province influenced the out-flow of natives from that province. The coefficient of immigrant share is positive and statistically significant at per cent significance level. In terms of the magnitude of the coefficient, it is smaller than one in the in-migration rate. Finally, in the last column, we see the net effect of immigrants, which is negative and statistically significant.

In the later part, we also provide an analysis to see longer run effect of immigrants on the internal migration behaviour of natives. In this analysis, we use data from 2000 to calculate in/out/net migration of natives and the share of immigrants across provinces in 1990. The findings are as follows:

Table 4. 4 The impact of the share immigrant on the natives' in-migration, out-migration and net migration rates, 2000

	in-migration	**out-migration**	**net migration**
Immigrant share (1990)	-0.0073***	-0.0007	-0.0067***
	(0.0020)	(0.0010)	(0.0017)
Skill and province fixed effects	Yes	Yes	Yes
N	1,995	1,995	1,995
R^2	0.4561	0.4767	0.4738

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Note: Sample includes only working age active males. Standard errors are reported in parentheses at the province-skill group level. The regressions estimated at the province level have 1,995 observations. Dependent variables are in-migration rate of natives, out-migration rate of natives, and net migration rate of natives, respectively. The regressions are at province level and include 67 provinces and weighted by the sample size of skill-province. Only natives who moved for job seeking are considered.

As seen from Table 4.4 the impact is smaller in the longer run as might be expected. In-migration and net migration rates are same in sign and statistical significance as they are in the previous analysis, although out-migration rate is not statistically significant. We should note that even though our sample (i.e. only job seeking natives) reflects personal choice of individuals which is an appropriate choice of sampling, 10-year lag is too long to expect any significant response. However, our data set does not allow us to do more.

4.6.2. Results at regional level

The analysis above is based on the province level. Therefore, the results show the migratory behaviour of natives between provinces. In the maps where the share of internal Turkish migrants is shown in Section 4.5, we have seen that some regions experienced higher level of in and out-migration. For instance, residents in the Eastern part of Turkey migrated out more intensely than middle east part of the country. This prompts the question of whether natives respond to immigration at the regional level as well. To test whether this is the case for Turkey, we define larger geographic units and run the regressions with the new geographic units. To do so, we divide Turkey into 26 regions and investigate whether there are any larger or smaller migratory responses of natives across regions.

Table 4. 5 The impact of the share of immigrants at the regional level, 1990

	In-migration	**Out-migration**	**Net migration**
Immigrant share (1985)	-0.0108***	0.0027***	-0.0136***
	(0.0020)	(0.0009)	(0.0020)
Skill and province fixed effects	Yes	Yes	Yes
N	1,038	1,038	1,038
R^2	0.7698	0.9298	0.5878

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Note: Sample includes only working age active males. Standard errors are reported in parentheses at the region-skill group level. The regressions estimated at the regional level have 1,038 observations. Dependent variables are in, out and net migration rate of natives. The regressions are at regional level and include 26 regions and weighted by the sample size of skill-region.

As seen from Table 4.5, we find statistically significant impact on each specification. The influx of immigrants increases the out-migration rate of natives, while it decreases in-migration rate into that region. This means that natives respond to immigrants by migrating to other regions as suggested by our descriptive statistics. This significant regional response is likely to be related with the small regional units. As argued in the previous chapter, if regions were larger, the response would be smaller since most movements are not too far. Therefore, we also tested whether it is the case if we classify broader regions. Our findings show there is no significant impact of immigration on the internal movement of natives within those large regions[14].

4.6.3. Occupational heterogeneity

Some studies in the literature suggest that even though the overall effect of immigration is low, the inflow of immigrants may affect certain sub-sectors in the economy remarkably (White and Liang, 1998). In this regard, for example, natives with a low skilled job (blue collar jobs) are more likely to face substitutability with immigrants since those jobs require only low skills, although there might be more complementarities for high skill jobs (white collar jobs) (Cohen-Goldner and Paserman, 2011). In this section, we investigate whether natives in certain occupations are more likely to leave provinces where the share of immigrants is high. This could reveal competition or complementarity among natives and immigrants across occupations. There are eight occupation categories in the analysis (as in chapter 3), which are (1) Professional, technical and related workers, (2) Administrative and managerial workers, (3) Clerical and related workers, (4) Sales workers, (5) Service workers, (6) Agriculture, animal husbandry and forestry workers, fishermen and hunters, (7) Non-agricultural production and related workers, transport equipment operators and labourers and (8) Workers not reporting any occupation. These are based on International Standard Classification of Occupations (ISCO) 68.

[14] Results are not presented here.

Table 4. 6 The impact of immigration on net migration of natives by occupation, 1990

	Occupation Groups							
	Professional, technical and related workers	Administrative and managerial workers	Clerical and related workers	Sales workers	Service workers	Agriculture, animal husbandry and forestry workers, fishermen and hunters	Non-agricultural production and related workers, transport equipment operators and labourers	Workers not classifiable by occupation
Immigrant share (1985)	0.001	-0.002**	-0.006***	-0.010***	-0.010***	-0.012***	-0.012***	-0.012***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.001)
Skill and province fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	1,924	1,046	1,433	1,942	1,941	2,284	3,155	278
r2	0.342	0.426	0.522	0.632	0.631	0.566	0.639	0.734

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Note: Sample includes only working age active males. Standard errors are reported in parentheses at the province-skill group level. The regressions are at province level and include 67 provinces and weighted by the sample size of skill-year-province. Our dependent variable is natives' employment rate.

Table 4.6 represents the heterogeneity across occupations with regard to their responses to immigration at the province level. All the correlations-except the first one- are negative in sign and statistically significant. However, the impact seems slightly larger in the last three columns, which are agriculture, animal husbandry and forestry workers, fishermen and hunters; non-agricultural production and related workers, transport equipment operators and labourers; and workers not classifiable by occupation. It should be noted that those occupations are likely to require relatively less skill than professional ones, for example. Therefore, substitution between natives and immigrants is likely to be easier.

4.6.4. Heterogeneity across selected skill groups

We also examine the impact across skill groups. As mentioned above, there are 40 skill cells in our analysis. Yet, in this section we categorize those skill groups as high education and low education cells, the former covering individuals with high school or higher educational

attainment and the latter those with less than high school education. However, we do not consider their experience levels in those two categories, i.e. cells may include college/faculty graduate and various levels of experience. Later on, we also investigate the impact on different experience groups that are independent from educational attainment. So, we make two experience categories that are low experience cells which cover individuals with less than 20 years of experience and high experience cells which cover individuals who have more than 20 years of experience. This time, experience categories are independent from education levels.

Table 4. 7 Out-migration rates of natives across selected skill cells, 1990

	Out-migration rates			
	Low educated	**High educated**	**Low experienced**	**High experienced**
Immigrant share (1985)	-0.0023**	0.0015*	-0.0051***	0.0019***
	(0.0010)	(0.0008)	(0.0020)	(0.0005)
Skill and province fixed effects	Yes	Yes	Yes	Yes
N	937	937	1,004	1,684
R^2	0.7750	0.9409	0.8826	0.7641

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Note: Sample includes only working age active males. Standard errors are reported in parentheses at the province-skill group level. The regressions include 67 provinces and weighted by the sample size of skill-year-province. Our dependent variable is natives' out-migration rate. Low education is defined as less than high school education while high education refers to high school and more education. On the other hand, low experience means less than 20 years of experience, while high experience means more than 20 years of .

In Table 4.7, we see the impact of immigration on the out-migration rates of natives for the selected skill groups. We find that immigration has a statistically significant negative impact on the low education and low experience cells, while the impact is positive for high educated- though only marginally significant- and high experienced natives. This means when there şs higher share of immigrants in a given province, out-migration of low educated and young Turks decreases; and out-migration of high educated and older Turks increases.

The reason for more response from high educated natives might be explained by lower risk and uncertainty of migration since they are more likely to find a job before they move (Greenwood, 1975) than the less educated. More explicitly, highly educated people process information better, have higher rewards of moving and lower costs, tend to rely less on family. They are also likely to have migrated before due to education, for example. Similarly, high experience

Turks are also likely to have less risk. On the other hand, individuals with less experience, younger males, are likely to be less mobile, which might be due to a higher risk of movement.

Table 4. 8 In-migration rates of natives across selected skill cells, 1990

	In-migration rates			
	Low educated	**High educated**	**Low experienced**	**High experienced**
Immigrant share (1985)	-0.0117***	-0.0145***	-0.0211***	-0.0001
	(0.0033)	(0.0028)	(0.0048)	(0.0007)
	Yes	Yes	Yes	Yes
N	937	937	1,004	1,684
R^2	0.6729	0.8013	0.6974	0.6472

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Note: Sample includes only working age active males. Standard errors are reported in parentheses at the province-skill group level. The regressions include 67 provinces and weighted by the sample size of skill-year-province. Our dependent variable is natives' out-migration rate. Low education is defined as less than high school education while high education refers high school and more education. On the other hand, low experience means less than 20 years of experience, while high experience means more than 20 years of education.

Apart from the out-migration rates of natives, Table 4.8 demonstrates the in-migration rates across those groups. Our findings suggest that immigration and in-migration rates of less educated, high educated and young natives are strongly correlated. Accordingly, a high level of immigration into a given province makes less experienced, young natives more reluctant than other groups to move into that province, which might be due to a lower probability of finding a job there. Only in the high experience group, we couldn't find statistically significant impact.

In our previous chapter, Chapter 3, we found that competition over employment is due to different levels of experience; and low experience - young- Turks are the most vulnerable group in terms of employability. In Table 4.7 and 4.8, the largest coefficient is -0.0211 (at 1 per cent statistical significance level) for less experience natives in terms of their in-migration rate. This means when the share of immigrants increases in a given province, fewer young Turks prefer to move into that province. This finding is consistent with the finding of Chapter 3.

We also examine the effect of several explanatory variables that might relate to internal migration of natives such as income, household members, security, job-specific transfers etc. However, we can still say that the impact of immigration exists across specifications at 1 per cent significance level. Results of this investigation is provided in Appendix 2.

4.7. Conclusion

Research on the internal migratory response of natives does not suggest a clear conclusion on whether immigrants displace natives in a given local labour market. The current empirical literature gives examples mostly from developed countries such as US, Canada or some of European countries such as UK and Italy. Yet, there is no consensus even within US based studies. On Malaysia, Del Carpio et al. (2015) finds that contrary to the developed country studies, immigration in a given state increases the inflow of natives into that state. This prompts further investigation into developing country examples to identify whether that positive effect is consistent across countries. Therefore, our study contributes to the migratory response literature by emphasizing reflection of a developing country labour market which is Turkey in our case.

Our analysis has two parts of investigation. First, we look at how the share of immigrants in 1985 influence migratory response of natives in 1990. Borjas (2006) suggests that immigration decreases the in-migration rate of natives while it increases the out-migration rate by using skill-cell approach. This approach allows us to compare the impact on competitors. Using Borjas' skill cell approach, our results are consistent with Borjas (2006) though our finding is quite smaller in magnitude. Secondly, we look at long term impact of the share of immigrants in 1990 on natives who moved voluntarily in 2000. As expected, the impact is smaller in magnitude and not statistically significant for out-migration rate. Since 10-year time lag is long enough to neutralise the impact of immigration, we can expect negligible response from natives.

We examine whether there is a migratory response across regions that subdivide the country into larger geographic units relative to province level. Findings are consistent with province level results to explain the out-migration of native people. It implies that natives' internal migration also takes place within larger geographic units, regions.

Our findings also suggest that some occupations are more vulnerable to a high share of immigrants in a given province. Our results show that workers with low level of qualification such as agricultural/non-agricultural labour and sales workers are the most affected groups across our 8 occupation groups. In addition to this, higher share of immigrants in a given province is associated with lower out-migration of low education and low experience groups; and higher out-migration of high experience groups. In terms of in-migration rates, we find that the share of immigrants in a province affect each skill group negatively, but the largest effect is in the group of low experience, which means young Turkish males, in particular, do not

migrate into provinces with high share of immigrants. Furthermore, our investigation of other factors influencing in or out-migration provides a deeper understanding of individuals' migration behaviour which differs between in-migration and out-migration. We find that the impact exists both in the initial specification and when we include several other variables that may influence the location choice of internal native migrants.

CHAPTER 5 NATIVES' ATTITUDES TOWARDS IMMIGRANTS

Abstract
The impact of immigration is still an ongoing debate amongst academics, politicians and the public. Even though research in the field does not provide a clear picture on the impact of immigration in the hosting labour market, still we observe a stance against immigration in general. In Turkey as an immigrant hosting developing country, our previous research found that immigration lowers natives' employment opportunities and natives relocate from their province of residence when the share of immigrants increases in that province. In this study, we investigate the determinants of attitudes towards immigrants by using the European Social Survey (Round 2-2004 and Round 4-2008). We show that the existence of immigrants in a given region influences natives' attitudes towards immigrants negatively, and also attitudes vary with characteristics such as age, education and income level. Besides, political orientation, media, egalitarianism (i.e. supporting income redistribution by government) and humanitarianism (i.e. helping others) play some role in influencing public sentiment.

5.1. Introduction

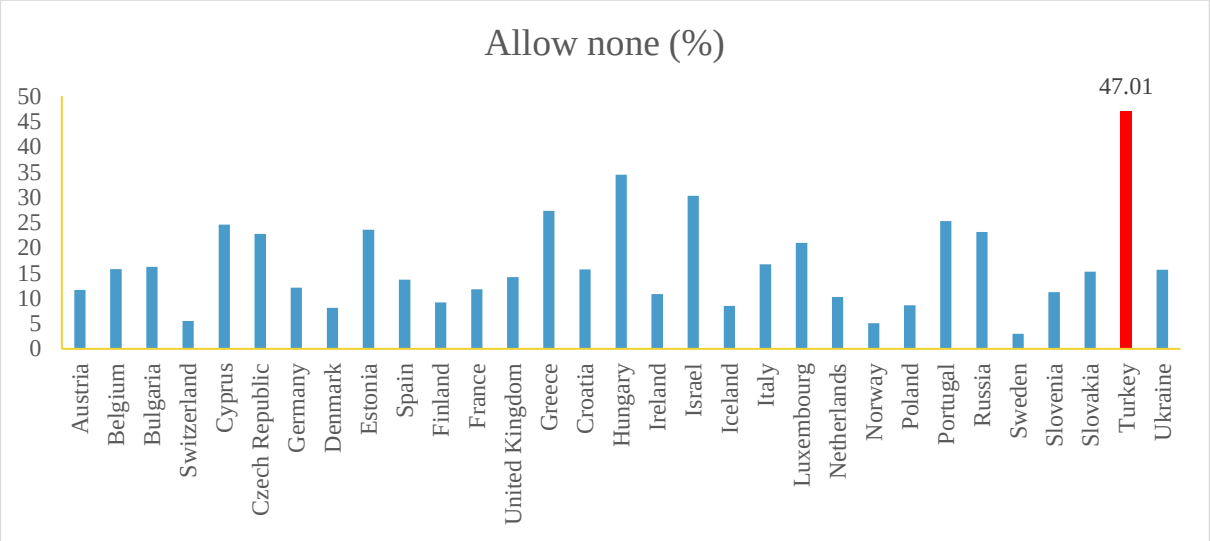
The impact of immigration is still debated amongst academics, politicians and the public. Even though research in the field does not provide a clear picture of the impact of immigration in the host labour market, still we observe a stance against immigration in general. The most common and straightforward opposition comes from the idea of labour market competition. This approach, which implicitly assumes self-interested actors in the labour market, argues that if individuals face competition with immigrants, they tend to hold more negative sentiments against them.

In Turkey, as an immigrant-hosting developing country, the national level analysis of our previous empirical chapter (Chapter 3) found that immigration lowers natives' employment opportunities. This finding implies there exists a labour market competition between natives and immigrants. Another finding in Chapter 4, on the other hand, shows that natives respond to immigration by leaving their province of residence. In summary, these findings show that Turks lost their jobs because of immigrant inflows into the country and some of them chose to move another place with fewer/no immigrants. This situation prompts us to consider natives' attitudes towards immigrants that might be affected by employment concerns of natives. Also, if they leave places with high share of immigrants, this might be because of their preferences (such as dislike of immigrants) beside employability.

In this chapter, we investigate the determinants of attitudes towards immigrants and how they are influenced by the share of immigrants in a given region. First of all, the labour market competition between natives and immigrants may give rise to an anti-immigrant preference among natives (i.e. labour market competition hypothesis). However, competition itself is not necessary to explain this behaviour. Taste-based discrimination, for example, might be a reason for negative sentiments for some natives, even though they do not experience a displacement effect in the labour market. Therefore, we also need to take account of social and cultural factors to identify how attitudes have been shaped. We should note that Turkey is an important case country when considering increasing numbers of foreign population. According to the Republic of Turkey Ministry of Interior Directorate General of Migration Management, around 3 million Syrians (or about 3.75% of the total Turkish population) have obtained asylum in Turkey between April 2011 and October 2017. It seems that these numbers will continue to increase and even though refugee/immigrant inflows cease, it is necessary to pay attention to public attitude because effective management of the foreign population in the country will require public support. Therefore, this makes our study valuable since we investigate what factors affect individuals' attitudes towards immigrants. If we understand the reasons producing negative attitudes, this may help to develop appropriate migration policies.

We use the European Social Survey which has been conducted across Europe to measure attitudes, beliefs and behaviour patterns. Turkey was included in two rounds of this survey, in 2004 (round 2) and in 2008 (round 4). This survey provides precious information on public opinion. When we look at the survey data which covers several countries, Turkey becomes prominent among other countries. One of the questions posed to the participants of the survey was whether they would allow immigrants of different ethnic groups from the majority into the country. This question may give an idea of the individuals' attitudes across countries. The distribution of the answer of "allow none of different race immigrants to come and live in this country" across countries shows that Turkey stands out with a notably high fraction. As seen from Figure 5.1, almost half of the participants reported that they would allow no immigrants of different race. This very high unwillingness to welcome immigrants also draws our attention to Turkey.

Figure 5. 1 Allow many/few immigrants of different race/ethnic group from majority



Source: European Social Survey, Round 2 (2004) and Round 4 (2008)

In terms of the scope of this study, we consider the section which includes questions about immigrants. There are six questions that help us to understand attitudes towards immigrants. The first two questions ask whether they would allow immigrants from the same race and from a different race to enter and live in this country. Those two questions allow us to see the public perceptions in terms of race, whether they oppose immigration regardless of the ethnicity or their attitudes are different for immigrants from the same race and ones from different races. Question 3 investigates the attitudes towards immigrants from poor countries outside Europe. This question may help us to understand public opinion about economically disadvantaged immigrants. The last three questions provide a more general view about immigrants such as whether immigrants are bad for the economy, make the country a worse place and undermine the national culture. These six questions, after all, provide a sufficiently broad scope of public sentiments towards immigrants in Turkey.

We have six dependent variables that have several ordered categories (4 categories for first 3 dependent variables and 3 for the rest of them). Hence, this necessitates the application of an ordered response model. For each dependent variable we estimate an ordered probit model. Our data is cross-sectional and has two waves (2004 and 2008). We, eventually, pool those two waves to take account of changes in attitudes over time.

The key findings of our analysis indicate the following:

i. We find that for four of our attitude variables (i.e. racial preferences, disadvantaged immigrants, the impact in the country in general and the country's economy), natives hold more anti-immigrant attitudes when the share of immigrants in a given region increases; the only exception concerns attitudes towards the impact of immigrants on a country's culture, where we find no significant impact.
ii. More educated individuals are more likely to hold positive sentiments towards immigrants; and younger people.
iii. people with 'left' ideology are more likely to feel positive about immigrants in each model.
iv. people who spend more time watching TV are more likely to hold negative attitudes towards immigrants, while people who spend more time on reading newspapers are more likely to hold positive sentiments towards immigrants.

The rest of this chapter is organized as follows: In Section 5.2 we briefly review the literature. Then, in Section 5.3, we present the data we use in this chapter and the characteristics of the dependent and the independent variables. Later on, in Section 5.4, we set up a model to illustrate how attitudes are shaped considering several factors. In Sections 5.5 we present the main results and Section 5.6 concludes.

5.1.1. Contribution to the existing literature

One contribution of this chapter is to provide a unique systematic empirical study of attitudes towards immigrants in the case of Turkey. We are aware of no research that has been done so far to examine what factors determine attitudes of Turkish population. Therefore, our study is the first attempt to fill this gap in the literature. It is worth noting that we use six particular questions to analyse attitudes towards immigrants to identify the type of sentiments (i.e., same race immigrants, different race immigrants, poor immigrants, economic effects, cultural effects and general effect in the host country) held by natives.

The second contribution is about an econometric concern. In the existing literature, potential simultaneity bias, which arises due to the ambiguous relationship between immigrant concentrations in particular localities and attitudes of natives in those localities, has been mostly ignored. However, we take into account this potential bias and exploit the lagged value of the suspected endogenous variable share of immigrants in regions. We expect this lagged variable at least to reduce the bias, even though it may still exist at some degree due to persistence in the share of immigrants.

Furthermore, our regional level analysis seems to prevent potential endogeneity of individual attitudes. Therefore, geographical classification of this analysis is large enough to minimize the bias due to self-selection of natives across locations within smaller areas. If natives who hold more anti-immigrant attitudes move to places where there are fewer/no immigrants, or if natives who hold more pro-immigrant attitudes move to places where there are many immigrants, the correlation between the share of immigrants and attitudes is likely to be underestimated. However, this effect is not likely to take place within large geographic regions as suggested by Dustmann and Preston (2001).

Last but not least, we consider the role of media in Turkey to shape society's attitudes towards immigrants. A content analysis of a well-known newspaper is utilised as a first step to understand media views on immigrants. Later, we include the variable of newspaper reading in the model to see whether media influences individual preferences in Turkey. This type of analysis, to our knowledge, has not been done before.

5.2. Literature review

The findings of the previous two chapters imply that immigrants worsen employment outcomes of natives at the national level and immigration is important on the location choice of natives in Turkey. In this chapter, we investigate natives' attitudes towards immigrants. Clearly, there is competition in the Turkish labour market between similar skilled natives and immigrants; hence, this may give rise to anti-immigrant stance in the country. Besides, we could expect negative sentiment against immigrants since natives relocate if the share of immigrants increases in their provinces (i.e. the more immigrants in a given locality, the less attractive that locality is for natives). Consequently, these findings prompt the question of how attitudes are shaped or what factors influence individuals' attitudes towards immigrants in the case of Turkey.

In this chapter, we consider both economic and non-economic factors that are likely to shape individual opinion toward immigrants. Obviously, attitude formation is a complex process in which individual self-interest and personality interact with each other. Therefore, sentiments towards a group of people are unlikely to be explained through a purely economic approach or through a purely personal value judgement which abstracts from monetary concerns. We therefore review the literature on economic and non-economic factors under separate sub-headings below.

5.2.1. Economic concerns

Most of the empirical research tends to conclude a very modest impact of immigration on natives' wage and employment levels in the host country (see for example, Card, 1990; 2001; Altonji and Card, 1991; Hunt, 1992; Pischke and Velling, 1997; Ottaviano and Peri, 2008; 2012), bearing in mind some of the limitations and econometric issues raised by the literature (see Borjas, 1997, 2003, 2006, 2017; Borjas, Grogger, and Hanson, 2006; Borjas and Katz, 2007; Aydemir and Borjas, 2007; Jaeger, Ruist, and Stuhler, 2018). Nevertheless, predictions of the empirical studies do not have to correspond exactly to the natives' perceptions of labour market threats (Dustmann and Preston, 2002). Unwanted labour market competition is the most common way of thinking about the opposition to immigration. Some of the research shows that individuals who are socio-economically disadvantaged hold more anti-immigrant attitudes (Schneider, 2008; Raijman, Semyonov and Schmidt, 2003), which might be because they experience higher levels of competition. We should also note that the threat on individual self-interest may not be actual, but may only be perceived (Raijman, Semyonov and Schmidt, 2003). Yet, such perceptions might make it hard to accept immigration (Wilkes, Guppy and Farris, 2008).

The economic effects of immigration through a change in the size and the composition of the labour force in the host country could give rise to a downward pressure on the wage of particular skill groups, i.e. an inflow of low skilled young immigrants leads to lower wages amongst competing low skilled young natives. Assuming self-interest or utility maximization behaviour, one might expect that worsening self-interest (e.g., lower wage level or falling into unemployment) may produce anti-immigrant sentiment as a result of this unwanted labour market competition. This economic concern has been thought to be a crucial factor in the relevant literature (Facchini and Mayda, 2012; Scheve and Slaughter, 2001). Scheve and Slaughter (2001) investigated the immigration related policy preferences of individuals in the US by using the 1992, 1994, and 1996 National Election Studies surveys. Their ordered probit estimates indicate that lower skilled individuals prefer more restrictions than higher skilled individuals. In this study, skill is measured by education and occupational wage level. Similarly, Mayda (2006) analysed cross-national survey data from the 1995 National Identity Module of the International Social Survey Programme (ISSP), and the third wave (1995-1997) of World Values Survey (WVS). Results showed that the probability of reporting pro-immigration opinions is positively associated with the skill (i.e. education) levels of the respondents. Dustmann and Preston (2007) also confirm this result in the case of the UK.

Additionally, Gang, Rivera-Batiz, and Yun (2002), in their multi country analysis, compare natives who are in direct competition with immigrants and natives who do not compete with immigrants. Their probit estimates reveal that natives who compete hold more anti-immigrant attitudes.

It is worth stressing that the role of education may not be straightforward in explaining skill specific labour market competition. Higher education does not only mean higher competitive power in the labour market but could also mean a more tolerant and respectful outlook (Gang, Rivera-Batiz, and Yun, 2002; Hainmueller and Hiscox, 2007, 2010). Therefore, it requires interpreting the coefficients of skill more cautiously as we cannot distinguish the effect of competition and changed outlooks due to more educational attainment.

Furthermore, economic concerns (e.g., wages and employment) are not limited to labour market competition but are also related to public finance and welfare state considerations (e.g. the tax burden imposed on natives through immigrants). Immigrants' use of public services such as public education and health services, welfare assistance, police and fire protection, roads, parks, and amenities and their contribution to tax revenues (Hainmueller and Hiscox, 2010) should be considered in the evaluation of immigration on the public finance of the host country. Immigrants benefit from the facilities provided by the host country, and they also support the welfare state via their tax payments. The question is whether they take more than what they contribute, which is a controversial issue in the literature. Borjas (1995) states that low skilled immigrants tend to use, for example, government programmes such as unemployment compensation and means-tested entitlement programmes that increase expenditures and their tax payment is not sufficient to offset those costs. However, Lee and Miller (2000)'s study is more positive in terms of the net fiscal impact of immigrants. They find that the fiscal impact of immigrants turns positive after 16 years, even though the initial impact is negative (Lee and Miller, 2000).

Dustmann and Preston (2006) in their multi country (22 mostly European countries) analysis find that people's perceptions about the tax burden due to immigrants have a larger effect on attitudes than job related concerns. It is obvious that the fiscal impact of immigrants depends on the immigrants' characteristics. For example, if immigrants are skilled, their impact on the public finance might be positive (Facchini and Mayda, 2009). This means they can contribute more to the welfare state than they take out as they do not need government subsidies such as unemployment or healthcare compensation, and they pay higher taxes since they are high

income earners. Therefore, bearing in mind immigrants' characteristics, the potential tax burden on native workers is likely to influence attitudes towards immigrants.

Facchini and Mayda (2012) raise an interesting point about an assumption being commonly made in the literature. They argue that in the literature, the survey respondents in each country are assumed to know the actual skill composition of immigrants in their country; hence, they do not directly measure attitudes towards skilled or unskilled immigrants. In other words, if a survey does not include a specific question on how individuals feel about other people with a particular skill, we may identify attitudes towards that specific skill group clearly. The authors ultimately use a direct measure of attitudes towards skilled immigrants through a particular question in the first round of European Social Survey (2002-2003). Their ordered probit analysis of attitudes towards skilled immigration reveals that more educated individuals do not favour skilled immigration, which implies labour market competition channel. Moreover, richer natives favour skilled immigration, which suggests tax payers consider fiscal burden (i.e. skilled immigrants tend to pay more tax and get less public benefit).

5.2.2. Non-economic concerns

In addition to economic factors, non-economic concerns may also influence individuals' preferences. One of the most crucial factors on the formation of opinion about immigrants is the existence of immigrants in the neighbourhood/region. It is hard to say that existence of immigrants in a locality is a pure non-economic concern for natives. However, we still discuss this factor under non-economic concerns since the literature reveals that there exists an anti-immigrant stance, even though labour market consequences are very modest. There are several studies that look at the size of the minority group and natives' sentiments towards those minorities (Krueger and Pischke, 1997; Dustman and Preston, 2001; Gang, Rivera-Batiz and Yun, 2002; Kunovich, 2004; Semyonov, Raijman and Gorodzeisky, 2006, 2008; Rink, Phalet and Swyngedouw, 2009; Escandell and Ceobanu, 2009; Fertig and Schmidt, 2011; Markaki and Longhi, 2013; Pottie-Sherman and Wilkes, 2017). Immigrant concentration may affect natives' attitudes in two ways. First, it may create a perception of threat that increases hostility (Dustmann and Preston, 2001). In other words, a larger foreign population may create a higher threat perception in natives as a result of a feeling of being economically or culturally threatened (Schneider, 2008). On the other hand, it may also reduce negative perceptions through inter-group contacts (i.e. contact hypothesis) (Dustmann and Preston, 2001; Escandell and Ceobanu, 2009).

Gang, Rivera-Batiz and Yun's (2002) probit estimates, which are based on the 1988 Eurobarometer survey, examine the impact of the foreigner concentration on Europeans' attitudes towards foreigners. It should be noted that foreigner concentration is measured via the declaration of respondents (through a question on whether there exist many, few or no foreigners in the respondent's neighbourhood), instead of actual numbers of foreigners in the neighbourhoods. The results indicate that a greater concentration of foreigners in the neighbourhood is associated with a stronger negative attitude towards immigrants in European countries. Likewise, Dustmann and Preston (2001) examine the impact of ward level ethnic concentration in England. They emphasize the possibility of simultaneity bias which may cause underestimation of the impact, i.e. racially intolerant natives are likely to locate in areas with few foreigners, and foreigners are more likely to locate in areas with a more tolerant native population. To avoid this potential simultaneity bias, they apply an instrumental variable approach (district and county level concentration of foreigners is exploited as instrument). Their IV estimates imply that the effect of ethnic concentration becomes more pronounced in comparison with estimates from ordinary probit estimation. Concerning the potential bias in the location choice of natives mentioned by Dustmann and Preston (2001), Markaki and Longhi (2013) employ a larger regional (NUTS1) analysis that minimizes this bias. Four waves of the European Social Survey (2002, 2004, 2006 and 2008) are utilised for 24 European countries. Their findings show that a higher percentage of immigrants is associated with more anti-immigration attitudes.

In contrast, Escandell and Ceobanu's (2009) finding does not support the hypothesis of exacerbated hostility. Instead, it shows that states with a larger presence of immigrants do not display significantly higher levels of exclusionism as in the case of Spain. Similarly, Krueger and Pischke (1997) also do not find a direct relation between the number of foreigners living in an area and the negative attitudes in Germany though they investigate anti-foreigner violence instead of stance against foreigners. In the case of Germany, Fertig and Schmidt (2011), surprisingly, find that a low foreigner share is associated with more negative attitudes towards them. This situation might be explained by the contact hypothesis as suggested by Escandell and Ceobanu (2009) which implies the more acquaintanceships and friendships the lesser the exclusion of foreigners. Closer interaction between natives and foreigners in their social life is likely to wipe out anti-foreigner sentiments.

Different findings in different country contexts imply that the characteristics of the immigrant (e.g. whether immigrants are rich/poor, skilled/unskilled, etc.) communities may differ across

countries and this may lead to different outcomes in the anti-immigrant preferences of natives. However, there is no consistency across studies on the measurement of sentiments and immigrant group size which may lead to different results (Pottie-Sherman and Wilkes, 2017).

Turning to other non-economic factors, prejudices, taste-based discrimination and cultural differentials are also seen as determinants of attitudes towards immigrants or foreigners. Taste-based discrimination occurs when a group of individuals prefer a certain group over another, based on tastes, but not any economic rationale as seen in xenophobia and racism (Busetta, Campolo and Panarello, 2018). Dustmann and Preston (2002) suggest that anti-foreigner attitudes are mostly shaped by racial considerations. Similarly, Gang, Rivera-Batiz and Yun (2002) show that people who find the presence of another race disturbing tend to feel foreigners are bad for the country. Dustmann and Preston (2002) explain that prejudices against different ethnic groups or cultures "may be fuelled by a fear of loss of national characteristics or a taste for cultural homogeneity" (p.3). Besides, the political orientation of individuals may influence their approach with regards to immigrants (Raijman, Semyonov and Schmidt, 2003; Fortin and Loewen, 2004; Wilkes, Guppy and Farris, 2008). Whilst the right wing is characterised with more anti-immigrant sentiment, the left wing seems more immigrant friendly. Voting behaviour, in this respect, may not always be straightforward. In other words, this behaviour can alter depending on the numbers of immigrants in a given locality. For example, Halla, Wagner and Zweimuller (2017) find that the inflow of immigrants into a community significantly affects that community's voting for a right-wing political party.

Furthermore, anti-immigrant sentiments may change over the years. Individuals who feel harmed by immigrants as a result of current competition in the labour market (e.g. those who are falling into unemployment or facing lower wages) and individuals who felt harmed by immigrants in the past may lead to an increasing anti-immigrant sentiment, i.e. if the number of competitors increases over time, society suffers from more negative attitudes (Gang, Rivera-Batiz and Yun, 2002). Relatedly, Escandell and Ceobanu (2009) look at the period of 1991-2000 and find a significant time effect that lowers the exclusionism of foreigners in Spain. Therefore, one might consider the time effect in the analysis to reach more rigorous results since studies that utilise a single cross section are not able to capture those changes over years.

Considering a belief in a link between immigrants and crime, the literature has found that individuals who feel a threat to their lives are more likely to hold a hostile view on foreigners (Sniderman, Hagendoorn and Prior, 2004). Besides, the literature also indicates that

egalitarianism and humanitarianism play a crucial role in shaping attitudes, that is, individuals with these values are more welcoming to immigrants (Pantoja, 2006). As another personal dimension, literature (*see* Lyubomirsky, King, and Diener, 2005) suggests that happy individuals are more optimistic; they experience positive moods more often; they judge others in a more favourable way.

Additionally, media in the host country may also contribute to pro or anti-immigrant attitudes. Saggar and Drean (2001) emphasize the role of the media in shaping public attitudes towards immigrants and underline the negative impacts of immigrants imposed by the media such as failure to control, too large a number, people smuggling and wasted resources. Racial profiling and anti-foreigner, xenophobic language in the media are likely to generate negative attitudes towards minorities in the society (Shrivastava, 2013).

5.3. Data description

We use 3,044 observations in total (1,234 from Round 2 and 1,810 from Round 4, after missing and omitted data) for Turkey from the European Social Survey (ESS). ESS is a multi-country survey that has been conducted every two years through face-to-face interviews since 2002 and available from its website[15]. Turkey participated in the ESS only in two of the rounds, Round 2 in 2004 and Round 4 in 2008. We merge those two rounds to generate a pooled data set. The survey represents randomly selected samples of individuals over the age of 14 in the country. There is a special section about immigration which questions the public about immigration or immigrants. Even though there are some questions which are different in the two rounds, we consider only questions asked in both waves.

5.3.1. Dependent variables

Our dependent variables are attitudes towards immigrants which are investigated by using six questions. The first two questions are related to the racial preferences of the public. The third question examines native perceptions in relation to economically disadvantaged immigrants from outside Europe. The last three questions are to measure more general views on the impact that foreigners have on the national economy, culture and overall effect in the country.

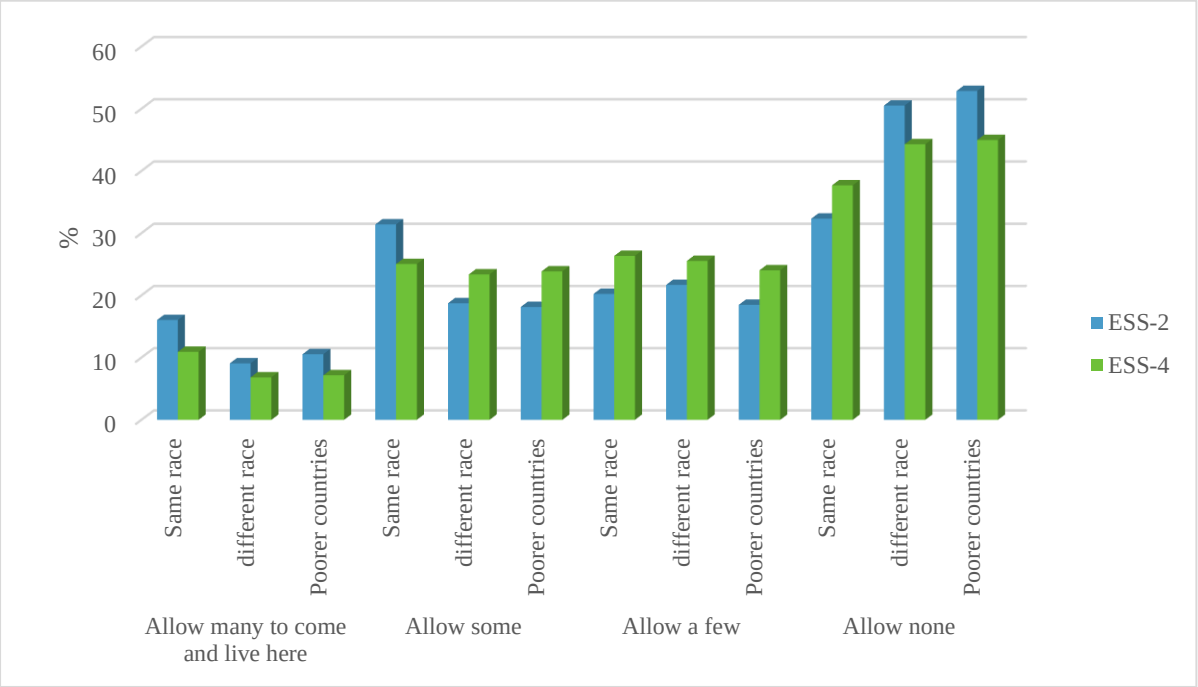
[15] *See* http://www.europeansocialsurvey.org/

Table 5. 1 Dependent variables

	Questions	Categories
1	To what extent do you think [country] should allow people of the same race or ethnic group as most [country] people to come and live here?	1-4
2	How about people of a different race or ethnic group from most [country] people?	1-4
3	How about people from the poorer countries outside Europe?	1-4
4	Would you say it is generally bad or good for [country's] economy that people come to live here from other countries?	0-10
5	Would you say that [country's] cultural life is generally undermined or enriched by people coming to live here from other countries?	0-10
6	Is [country] made a worse or a better place to live by people coming to live here from other countries?	0-10

The response categories in the first three questions are 1: allow many to come and live here, 2: allow some, 3: allow a few, and 4: allow none. The later questions allow responses on an ordinal scale from 0 which stands for "immigrants are bad for the economy/cultural life undermined/ worse place to live, to 10 which stands for "immigrants are good for the economy/cultural life enriched/better place to live. It would be difficult to estimate an ordered model with so many categories since some of the categories expectedly are too small. Therefore, to simplify the presentation of the estimated marginal effects and have a more balanced structure of the categories, we generate three broader categories. Accordingly, categories 0 to 2 are grouped into 1; categories 3 to 6 are grouped into 2; categories 7 to 10 are grouped into 3. So, responses are eventually coded as "1" for immigrants are bad for the economy/culture/place, "2" for neither good nor bad, and "3" for immigrants are good for the economy/culture/place.

Figure 5. 2 Whether you would allow many/few immigrants of same race / different as majority and poor immigrants (percentage)

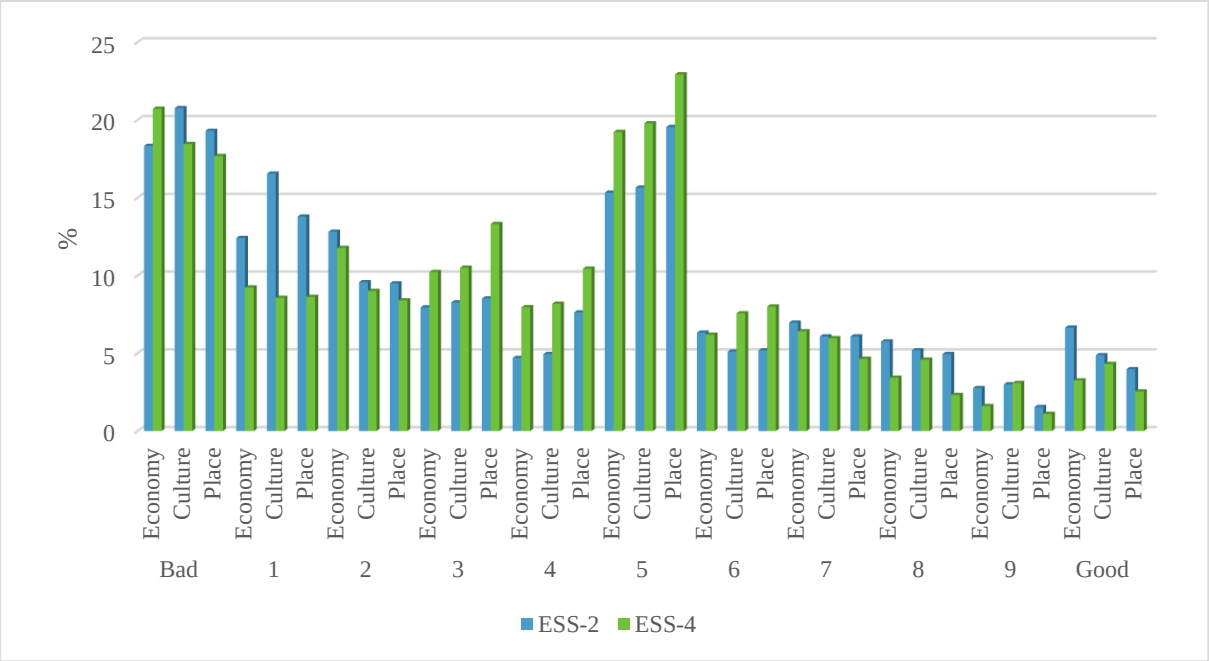


Source: ESS, Round 2 and Round 4

Figure 5.2 shows the distribution of answers given for questions 1, 2 and 3. Question 1, *to what extent do you think [country] should allow people of the same race or ethnic group as most [country] people to come and live here?*, allows us to measure natives' attitudes towards the same race individuals. Our descriptive statistics show that pro-immigrant sentiments decreased over survey years even though those immigrants were from the same race as natives in Turkey. While 32 per cent of the respondents said allow none of them in round 2, this rate was 37 per cent in round 4. In addition, the share of people who would allow many immigrants fell to 10 per cent from 16 per cent in the previous wave. In the second question, we capture attitudes towards immigrants from a different ethnic background. We aim to investigate the impact of taste-based discrimination in this and the previous questions. It is clearly seen that people are less tolerant of a different race in comparison with same-race immigrants. Turkish people who would allow many immigrants from a different race are only 9 per cent in round 2 and even lower in round 4 (6 per cent). 50 per cent of the sample responded that they would not allow any different race immigrants. However, this share decreased to 44 per cent in round 4 which may imply that people become more positive to another ethnic group's entrance into the country.

Apart from the race of immigrants, Question 3 captures attitudes towards people from poorer countries. From the graph, we see that people in Turkey do not support liberal immigration policies that encourage the inflow of immigrants from poor countries. More than half the population (52 per cent) in the sample want no migration from poor countries, although it is slightly decreased in the later round (44 per cent).

Figure 5. 3 Immigration bad or good for country's economy, culture and place (%)



Source: ESS, Round 2 and Round 4

In Figure 5.3, we investigate attitudes towards the immigrants' role in the country's economy, culture and place in the host country. This is a direct question to measure the relevant concerns of individuals. Respondents were asked to rank on a 0-10 scale. As seen, the answers tend to say immigration is bad for the economy. Only a 28 percentage of people answered above the fifth category in Round 2 and this rate fell to 20 per cent in the later round.

Apart from economic concerns, people may also feel their culture is threatened. In question 5, we want to see how cultural factors influence individuals' attitudes towards immigrants. Data shows that individuals are clustered in the left part of the distribution, which means a considerable number of people felt threatened in terms of their cultural identity. The difference of two extreme points, good and bad, is remarkable. Only 4 per cent of people stated that immigration enriched their culture, although about 20 per cent of them answered it is bad for their culture.

Question 6 captures individual beliefs about whether immigration makes the country a better or worse place to live in. As seen from the distribution of the answers among ten categories, similar to the previous questions, people tended to think immigration worse for the country. At the positive end of the categories, about 4 per cent of our sample in round 2 thought that immigration made Turkey a better place to live in, yet, this rate decreased to 2 per cent in round 4. However, the negative end of the categories shows that slightly less people thought immigrants make Turkey a bad place over time (from 19 per cent in round 2 to 17 per cent in round 4).

5.3.2. Independent variables

A set of explanatory variables will be used to establish the impact of these variables on the probability of a native person displaying anti-immigrant sentiments. Summary statistics of the explanatory variables to be used in the model are given in Tables 5.2 and 5.3.

Table 5. 2 Summary statistics of continues variables

Variable	Definition	Obs	Mean	SD	Min	Max
Imshare	Lagged share of immigrants in the region (2000)	3,044	.013	.012	.0017	.0421
Age	year born	3,026	1968.8	15.94	1915	1994
Education	number of years	3,032	7.015	4.147	0	23

Table 5. 3 Summary statistics of categorical variables

	Categories	Frequency	Per cent
	Istanbul	674	22.14
	Western Marmara	120	3.94
	Aegean	442	14.52
Region	Eastern Marmara	350	11.50
	Western Anatolia	327	10.74
	Mediterranean	480	15.77
	Western Black Sea	174	5.72
	South East	477	15.67
Male	0	1,579	51.87
	1	1,465	48.13
Unemployment	0	2,788	91.59
	1	256	8.41
	<400	543	19.71
	401-500	442	16.04
	501-700	599	21.74
	701-800	401	14.56
Household Income	801-1000	288	10.45
	1001-1200	167	6.06
	1201-1500	122	4.43
	1501-1750	79	2.87
	1751-2500	54	1.96
	>2500	60	2.18
Time	2	1,234	40.54
	4	1,810	59.46
Happy	0	1,424	46.78
	1	1,620	53.22
Safe	0	1,125	36.96
	1	1,919	63.04
Helping	0	233	7.65
	1	2,811	92.35
Trust Legal System	0	1,207	39.65
	1	1,837	60.35
Left wing	0	2,514	82.59
	1	530	17.41
	No time at all	225	13.72
	Less than 0,5 hour	828	50.49
	0,5 hour to 1 hour	420	25.61
Newspaper	More than 1 hour, up to 1,5 hours	96	5.85
	More than 1,5 hours, up to 2 hours	34	2.07
	More than 2 hours, up to 2,5 hours	9	0.55
	More than 2,5 hours, up to 3 hours	8	0.49
	More than 3 hours	20	1.22
	No time at all	237	8.11
	Less than 0,5 hour	769	26.33
	0,5 hour to 1 hour	1,053	36.05
TV	More than 1 hour, up to 1,5 hours	391	13.39
	More than 1,5 hours, up to 2 hours	177	6.06
	More than 2 hours, up to 2,5 hours	78	2.67
	More than 2,5 hours, up to 3 hours	54	1.85
	More than 3 hours	162	5.55

Notes: Sample includes only Turkey born individuals. Summary statistics do not apply design and population size weights.

We control for a standard set of demographic characteristics which are age (measured in year born) and gender (coded 1 for male), as well as socio-economic status which include education (measured in number of years), unemployment (dummy coded) and household income (measured in deciles).

In our model, the impact of socio-economic status is measured by using the indicators of household income, unemployment and education. The age of an individual matters for a number of reasons as emphasised in Dustmann and Preston (2001):

i. life experience which is an important indicator of attitudes,
ii. labour market considerations depending on the position in the economic cycle (i.e., existence of competition between younger individuals and immigrants for the same job, for example),
iii. cohort effect (i.e., migration might be a more ordinary situation for new generations as it has increased year by year and they have been raised in that environment, yet, older generations may not be as tolerant as younger ones since this is not a familiar concept to them) might be measured using age variable

We also include region (measured in categories of 12 regions of the country) and time (measured in survey years). The literature, in general, use a cross-sectional analysis and misses the time element. However, time variable allows us to capture how time specific factors influence attitudes in the country. We also include a region variable in order to control for regional differences within the country.

Our main variable of interest is to explain attitudes towards to the share of immigrants. This is a regional variable and measured by a ratio of immigrants over total population in the region. In the survey, we have information on whether the respondent was born in the country or not. We make use of this information to define who is an immigrant. In other words, we define someone as immigrant if she or he was not born in the hosting country, Turkey. It would be interesting to investigate the attitudes of immigrants towards immigration as well. However, our sample size would be too small in the European Social Survey, if we consider only the attitudes of immigrants. We expect to find that the higher existence of immigrants in a given region gives rise to more anti-immigrant attitudes of natives because of increased competition.

In the latter part of the analysis, we also try to capture the effect of personality[16] through eight additional control variables: feeling safe, the importance of helping others, trust in the legal system, political orientation (coded 1 for left wing), reading newspapers, watching TV, redistribution and happiness. All of these variables are dummy coded, except reading a newspaper and watching TV. In the original data set, those variables have several categories,

[16] We refer personality to indicate listed eight variables above, which is different than the term used in psychology.

i.e. feeling safe has 4 categories; helping others has 6 categories; trust in the legal system, political orientation and happiness have 11 categories. Yet, to simplify the presentation and to avoid very few observations in the same categories, we dichotomize those variables with the dummy variables equal 1 if a respondent answered one of the categories above the neutral midpoint[17].

As suggested by the literature, a belief of a relation between crime and immigration and some personal characteristics are important factors in attitude formation. Therefore, we make use of two survey questions to measure individuals' safety concerns: 1) how safe do you - or would you - feel walking alone in this area after dark? and 2) how much do you personally trust the legal system? Both questions are coded 1 if a person feels safe or trusts the legal system, 0 otherwise. To measure personal views of egalitarianism and humanitarianism, we use one of the survey questions: is it important to help people and care for others' well-being? Similarly, this question is coded 1 for agreement, 0 otherwise. We measure ideology or political orientation by using this question, which is coded 1 if the person places himself/herself at the left-wing, 0 otherwise.

We also consider that media, TV and newspapers, have an impact on attitudes. Saggar and Drean (2001), in the case of UK, highlight the influence of media on public opinion and underline the language of the media: danger, inability to control numbers, wasted resources, etc. In the context of Turkey, a basic content analysis of headlines in the Hurriyet Daily News, one of the largest newspapers by circulation, shows that 68% of articles in December 2008 had a negative view of migrants (see Appendix 3 for content details). Therefore, in the analysis we control for media as well. The ESS survey has two media-related questions that are used to measure this effect: 1) on an average weekday how much of your time watching television is spent watching news or programmes about politics and current affairs?, and 2) on an average weekday how much of this time is spent reading about politics and current affairs? Those questions have 8 categories in ascending order, starting from 0: no time at all to 7: more than 3 hours.

Finally, we also control for personal happiness as a factor affecting attitudes towards foreigners. We expect that happy people are more supportive of immigration, so they are more likely to have pro-immigrant sentiments. ESS has a question that directly asks 'how happy you

[17] The analysis was also done by using original set of categories, yet, this did not affect the results considerably.

are'. This question consists of 11 categories from 0, which is extremely unhappy to 1 which is extremely happy. We dichotomize this variable and recode the answer categories from 6 to 11 as 1, the remaining categories as 0. It is worth noting that there might exist endogeneity due to inclusion of personality and happiness variables in the model. Therefore, we consider this in extensions to the basic model where each variable will be considered separately.

5.4. Empirical model

Classical regression models which require a continuous dependent variable cannot be utilised in this study since we have to use an opinion survey in which our dependent variables have categories. Those categories are coded as 1, 2, 3, 4 and so on; yet, those numbers do not make sense as they are rankings between different options. That is to say, there is a latent continuous metric underlying the ordinal responses observed in the survey. We do not observe that variable itself, but we can observe when it crosses the thresholds.

Let A_{it} measure personal preferences towards immigrants by a native individual i at time t. This variable is related to an underlying latent continuous variable A_{it}^{*} which captures relevant anti or pro- immigrant preferences. The responses are scaled from 1: allow many immigrants, to 4: allow none; and 1: immigrants make the country a worse place/cultural life undermined/bad for the national economy to 3: immigrants make the country a better place/cultural life enriched/good for the national economy. Although there is a clear ranking across the categories of the responses, the distance across adjacent categories cannot be treated as the same (Liao, 1994). For example, the distance between a*llow many immigrants to come and live here* and *allow some* may not be the same as the difference between *allow some* and *allow a few*. Due to the non-interval nature of the dependent variable (the spacing of the outcome choices cannot be assumed to be uniform), ordinary linear regression would not be appropriate (Liao, 1994).

Assume that latent A_{it}^{*} variable is determined by the following equation:

$$A_{it}^{*} = \beta_0 X_{it} + \beta_1 IM_{r(t-1)} + \beta_2 P_{it} + \partial_r + \gamma_t + \varepsilon_{it} \qquad \textbf{(5.1)}$$

where X_{it} is individual *i*'s socio-economic characteristics at time t. The key parameter for identification is β_1, which denotes how the share of immigrants (IM) in region r in the past (t-1) correlates with natives' attitudes towards immigrants. P_{it} denotes personality of individuals about feeling safe, trust in the legal system, political orientation, happiness etc. that are summarised in the previous section, of person *i* at time *t*. ε_{it} is a mean-zero random error term reflecting unobserved factors related with individual preferences.

$A_{it,}$ the observed ordinal variable, takes on values 1 through 3 or 4 depending on the question according to the following scheme:

$$A_{if} = 1 \text{ if } A_{if}^{*} \leq \mu_1 \quad \textbf{(5.2)}$$

$$A_{if} = 2 \text{ if } \mu_1 < A_{if}^{*} \leq \mu_2 \quad \textbf{(5.3)}$$

$$A_{if} = 3 \text{ if } \mu_2 < A_{if}^{*} \leq \mu_3 \quad \textbf{(5.4)}$$

μ are the unknown cut off points and we are concerned with "*the probability of an event - how likely the event is to occur*" (Liao, 1994:1). So, we investigate the likelihood of a particular response in this chapter.

Ordered probit models are not directly interpretable as OLS models. This difficulty prompts us to focus only on the statistical significance and the signs of the coefficients. Since this does not provide a clear interpretation of how much a particular variable increases or decreases the probability of a particular response, we use marginal (Liao, 1994). Those marginal effects of the models should sum to zero and this might be used as a check of the results. Besides, in terms of goodness-of-fit measures, the ordered response models differ from OLS regressions which come up with R-squared. Pseudo R-squared is the most commonly used goodness-of-fit measure in these models and this measure is not equivalent to R-squared in OLS. It is almost impossible to get a value close to 1.

Individuals who were not born in Turkey are defined as immigrants. To calculate the share of immigrants we divide the number of immigrants living in the region *r* at time *t-1* over the total native population living in the region *r* at time *t-1*. Time t-1 represents 2000 as an appropriate lag.

Concerning the selection of an appropriate ordered response model, there is no clear advantage of logit models over probit models. The only difference is that the probit model assumes a standard normal distribution which has variance 1, whereas the logit model assumes a logistic distribution which has variance $\pi^2/3$ (Amemiya, 1981). Based on the considerations mentioned above, we choose the ordered probit model to be the most appropriate modelling for the *attitude* variable. We could also choose the ordered logit model in this study. Yet, ordered logit model would be chosen in the case of heavy concentration of observations at the tails of the distribution (Liao, 1994), which is not the case in our study (see Appendix 3 for the distribution

of the sample across categories). Thus, we decided to use the ordered probit model in this chapter.

It is worth stressing that a statistical problem that affects estimates arises from endogeneity. We expect that the increased share of immigrants in a given locality gives rise to more anti-immigrant sentiments due to a higher level of competition over scarce resources, or alternatively it can decrease anti-immigrant sentiments due to familiarity with immigrants (i.e., contact hypothesis). Yet, in either case, the variable of the *share of immigrants* might be endogenous if immigrants choose their locations where natives do not hold anti-immigrant attitudes. We use the lagged share of immigrants in place of immigrant share to reduce this potential simultaneity bias. In other words, if we use the current stock of immigrants in a given region, this may result in bias due to the inter-relation between the attitudes and current stock of immigrants in the region. However, the current attitudes of natives are less likely to be inter related with the past share of immigrants in the region since the share of immigrants in a given region has a lagged effect on the attitudes of natives in that region. That is to say, opinion formation takes time and attitudes of natives are shaped over time when immigrants make use of local amenities or get public benefits, for example. However, this particular endogeneity remains a concern if the attitudes of natives towards immigrants are serially correlated. We can think of a scenario where the initial waves chose to settle in region r since natives in that region hold positive sentiments towards immigrants (i.e. they welcome others), and this reason persists over years. Under this scenario, serial correlation violates the condition that the explanatory variable should be independent of error term. Yet, Table 5.2 supports that correlation between lagged share of immigrants and attitude variables are quite low.

Table 5. 4 Correlation coefficients between lagged share of immigrants and attitude variables

	Lagged share of immigrants
Same race	0.0595*
Different race	0.0487*
Poorer countries	0.0736*
Place	-0.0607*
Culture	-0.0525*
Economy	-0.0894*

*****correlation coefficients significant at the 5% level or better
Source: Author's calculation based on ESS data

Furthermore, the location choice of individuals is influenced by a complex set of factors such as social relations with family, relatives and friends; job opportunities; local amenities (Fertig and Schmidt, 2011). Hence, natives' attitudes towards immigrants consist of only a very small

part of that complex process which makes us think that potential endogeneity of the variable of the immigrant share is not that important.

Additionally, in our analysis, the immigrant share variable is at regional level, which consists of 12 regions of Turkey and those regions are quite large (i.e. one region of Turkey covers about 6 provinces). Even though some neighbourhoods or even districts are famous for their homogeneous ethnic composition, loyalty to national identity and culture, and a more anti-immigrant stance that may push immigrants away from those places, this is unlikely to be the case in very large geographic units (Dustmann and Preston, 2001). In other words, if we consider neighbourhoods as the unit of study, for example, the results might be biased since natives who desire a more homogeneous population can choose to live in neighbourhoods where there are no/a few immigrants, and immigrants can also choose to live in neighbourhoods where natives hold positive sentiments towards them. Large geographic units are unlikely to be so homogenous and therefore immigrants are not likely to choose where to live only depending on attitudes within a whole region. Other factors will affect the decision such as job opportunities. Our findings on the internal relocation of natives in Chapter 4 show that natives are not willing to respond to the immigrants within large geographic units (12 regions across the country as geographic classification of the analysis in this chapter), which means the relocation decision of natives within a large region is not sensitive to the existence of immigrants in that region[18]. Additionally, our data is at individual level, so our dependent variables measure individual attitudes. Therefore, an individual opinion will have a very small impact on overall attitudes when being considered in a very large area. Accordingly, our regional level analysis helps alleviate some of our concerns about endogeneity.

Apart from the immigrant share variable, there might be other variables that are endogenous. One of the explanatory variables in the second part of our specifications is whether *helping others is important for you*. This is a binary variable which takes **1** if `yes` and **0** if `no`. We can suspect that if a person holds positive attitudes towards immigrants, he or she is likely to think that helping others is important. Similarly, other explanatory variables of attitudes towards immigrants and attitudes towards political orientation (i.e. left/right preference); and being happy might be determined by the same factors. However, personal opinions on many aspects of society are interrelated (Fertig and Schmidt, 2011). Given the endogeneity of

[18] Our analysis based on 12 regions of the country shows that there is no statistically significant association between the share of immigrants and in/out migration of natives.

personality characteristics, we do not include them in the model. However, since we want to see the impact of those characteristics on attitude formation, we include them in further specifications.

In the regressions we use post-stratification weights. The way a particular characteristic of our sample is distributed might differ from the way it is distributed in the population. For example, if our sample consists of 40 per cent young people, yet young individuals make up 25 per cent of the population, then this will bias our estimates as the statistical process gives larger weight to those individuals we oversampled. In the construction of post-stratification weights, information about age, gender, education and region is used. To calculate those weights, auxiliary information is needed to adjust the distribution of the population and this information is taken from European Union Labour Force Survey (LFS)[19]

5.5. Results

First, we present our initial specification for each separate model which includes the standard set of demographic and socio-economic control variables to explain individuals' sentiments towards the foreign-born population. Our observations in both survey rounds are pooled. Each of our models controls for *region* fixed effects to account for region specific impacts; *time* to account for changes in the opinion over time; and *region-specific time trends*. In later specifications, we include a variety of factors that are likely to influence personal opinion on immigrants. With the help of the literature and our observations on this country (for example, on the effect of media), eight additional regressors are included in the models, including some of the personality characteristics and media.

Table 5.5 reports estimated marginal effects for our first ordered probit model. In this model, we attempt to identify natives' attitudes towards i. same race immigrants; ii. different race immigrants; iii. poor immigrants. Each of them has four columns and each column shows marginal effects for one of the dependent variables. Our main coefficient of interest (i.e., share of immigrants) across these three models will capture the impact that the increased existence of immigrants in a given region will have on attitudes towards them.

[19] *See* https://www.europeansocialsurvey.org/docs/methodology/ESS_weighting_data_1.pdf for more detailed information.

Table 5. 5 Whether natives would allow immigrants from same race/different race/poorer countries to live in Turkey, marginal effects on each category

	same race				different race				poorer countries			
Variables	**Many**	**Some**	**A few**	**None**	**Many**	**Some**	**A few**	**None**	**Many**	**Some**	**A few**	**None**
Lagged share of	-0.026**	-0.021**	0.003**	0.045**	-0.022***	-0.033***	-0.008***	0.063***	-0.027***	-0.034***	-0.008***	0.068***
	(0.011)	(0.009)	(0.001)	(0.019)	(0.007)	(0.011)	(0.003)	(0.021)	(0.008)	(0.010)	(0.003)	(0.021)
Region, time and their interaction	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2,664	2,664	2,664	2,664	2,660	2,660	2,660	2,660	2,666	2,666	2,666	2,666
Pseudo R2	0.0301	0.0301	0.0301	0.0301	0.0357	0.0357	0.0357	0.0357	0.0305	0.0305	0.0305	0.0305

Note: Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1. All specifications include covariates of gender (male), age, education, unemployment, household income.

Table 5. 6 The role of immigrants in place, culture and economy, marginal effects on each category

	Place			Culture			Economy		
Variables	**Worse**	**Neither W nor B**	**Better**	**Undermined**	**Neither U nor E**	**Enriched**	**Bad**	**Neither B nor G**	**Good**
Lagged share of	0.061***	-0.027***	-0.034***	0.029	-0.009	-0.020	0.055***	-0.019***	-0.035***
	(0.020)	(0.009)	(0.011)	(0.019)	(0.006)	(0.013)	(0.019)	(0.007)	(0.012)
Region, time and their	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2,732	2,732	2,732	2,732	2,732	2,732	2,732	2,732	2,732
Pseudo R2	0.0242	0.0242	0.0242	0.0319	0.0319	0.0319	0.0293	0.0293	0.0293

Note: Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1. All specifications include covariates of gender (male), age, education, unemployment, household income.

The first four columns of the table report the average marginal effects of each category on the attitudes towards same race immigrants. Accordingly, when the share of immigrants increases in a given region, the probabilities of reporting "allow many and some immigrants" decrease by 0.026 and 0.021, respectively. However, the probabilities of "allow a few and none" increase by 0.003 and 0.045, respectively. This means natives tend to report higher anti-immigrant attitudes.

The middle four columns of the table report marginal effects on the attitudes towards different race immigrants. Except the category of "allow a few", responses are quite similar to the one on the same race immigrants. However, the magnitudes of the coefficients indicate much stronger anti-immigrant views. Thus, while there was a small positive reaction to allowing a few same race immigrants (column 4), there is a small negative coefficient on allowing a few different race immigrants (column 8). Similarly, the coefficient of the last category (i.e., allow none) is larger (0.063) than this coefficient on same race immigrants (0.045).

Finally, the last four columns present the marginal effects of each category on attitudes towards poor immigrants. We should note that the coefficient of the category "allow none" is even larger than in the previous estimations (i.e., 0.068).

In the next table, Table 5.6, we investigate more general views about immigrants. The marginal effects for the model in which our dependent variable is natives' opinion on whether immigrants make this country a worse or better place to live in are reported in the first three columns of Table 5.6. There are 3 categories of responses: 1. they make this country worse, 2. they make this country neither worse nor better, 3. they make this country better. Again, the share of immigrants in the region influences natives' attitudes significantly. A 1 per cent increase in the share of immigrants in a given region increases the probability of reporting "immigrants make the country a worse place to live" by 6.1 per cent and decreases the probability of reporting "immigrants make the country a better place to live" by 3.4 per cent.

The middle three columns of Table 5.6 summarise the marginal effects for the model relating to the native perceptions of the impact of immigrants on local culture. In this model, we could not find any significant impact of the share of immigrants in the region, although the signs of coefficients are still in the same direction and suggest that an increased share of immigrants makes natives feel their culture is undermined. However, the effect is neither as large nor as significant as the impact on attitudes to place and economy.

In the final model of the first specification, we consider natives' attitudes towards how immigrants impact the country's economy, which is reported in the last three columns of the table. Our findings show that when the share of immigrants increases, individuals are more likely to report that immigrants are bad for the national economy and less likely to report that they are good for the economy.

Appendix 3 provides more detail on these estimation results. It might be worth emphasizing here that, as seen in each specification, younger and more educated people are more tolerant of immigration, which is consistent with literature. Besides, we find a significant association between household income and attitudes on the role of immigrants. So, individuals who are in the upper tail of the income distribution (1501-1750 TL) report more positive attitudes to immigrants' effects in Turkey. Those individuals are also less likely to think that their culture is undermined by immigrants. In terms of the country's economy, we find a more statistically significant impact of household income. Individuals with a household income that is higher than 800 TL are less likely to report that immigrants are bad for the economy, and more likely to report that immigrants are good for the economy.

So far, the first lesson from the tables above is that for Turkey we find strong evidence, with the exception of the model on country's culture, of a negative relationship between the existence of immigrants in a region and natives' attitudes towards immigrants with respect to several dimensions (racial preferences, disadvantaged immigrants, the impact on the country in general and the country's economy). This finding is consistent with Dustman and Preston (2001). Our finding in Chapter 4 shows that increased share of immigrants in a given province is associated with a negative in-migration into that province and a positive out-migration from that province. When we consider negative attitudes of natives, this internal migration response of natives seems to be related to this anti-immigrant attitudes of Turkish society in addition to labour market concerns. We should also note that, the estimated marginal effect of the share of immigrants in a given region is, in general, larger than the association with age, education or income.

Secondly, more educated individuals are more likely to hold positive sentiments towards immigrants, which supports the claim of "the better educated have learnt to censor emotionally based prejudices against foreigners" (Ivarsflaten, 2005: 33) and other literature (see for example, Card, Dustmann and Preston, 2005; Rainman, Semyonov, and Schmidt, 2003; Gang, Rivera-Batiz and Yun, 2002; Scheve and Slaughter, 2001). Expectedly, we also find out more

negative sentiments amongst older people. In each model, we see younger people are more tolerant to immigrants and they feel more positive about them.

Another lesson from previous findings is that household income is an important factor in shaping attitudes. Individuals with higher income, who are able to live comfortably hold more positive sentiments towards immigrants, which is not surprising as commonly seen in the literature (see Schneider, 2008; Hayes and Dowes, 2006). However, we did not find any statistically significant anti-immigrant response from individuals with lower household income. Maybe most surprisingly, we could not find a significant association between unemployment and attitudes towards foreigners. However, this finding is parallel to what we have found in the household income.

Table 5. 7 Whether natives would allow immigrants from same race/different race/poorer countries to live in Turkey, with personality regressors

	same race				different race				poorer countries			
Variables	**Many**	**Some**	**A few**	**None**	**Many**	**Some**	**A few**	**None**	**Many**	**Some**	**A few**	**None**
Log share of immigrants	-0.045**	-0.031**	0.010**	0.066**	-0.040***	-0.051***	-0.006**	0.097***	-0.048***	-0.061***	-0.010***	0.118***
	(0.019)	(0.013)	(0.004)	(0.028)	(0.013)	(0.016)	(0.003)	(0.031)	(0.013)	(0.016)	(0.004)	(0.031)
Feeling safe	-0.011	-0.007	0.003	0.016	0.006	0.008	0.001	-0.016	-0.005	-0.006	-0.001	0.013
	(0.016)	(0.011)	(0.004)	(0.023)	(0.011)	(0.014)	(0.002)	(0.026)	(0.011)	(0.014)	(0.002)	(0.026)
Helping others	-0.046	-0.026	0.013	0.059	-0.021	-0.024	-0.001	0.046	-0.064**	-0.062***	-0.000	0.125***
	(0.036)	(0.016)	(0.011)	(0.041)	(0.024)	(0.025)	(0.001)	(0.049)	(0.026)	(0.020)	(0.004)	(0.042)
Trust on legal system	0.001	0.001	-0.000	-0.002	0.009	0.012	0.001	-0.023	0.001	0.002	0.000	-0.003
	(0.016)	(0.011)	(0.004)	(0.023)	(0.011)	(0.014)	(0.002)	(0.026)	(0.011)	(0.013)	(0.002)	(0.026)
Left	0.031*	0.020*	-0.008	-0.043*	0.036**	0.042***	0.002	-0.080***	0.032**	0.037**	0.004**	-0.073**
	(0.019)	(0.011)	(0.005)	(0.024)	(0.014)	(0.015)	(0.002)	(0.029)	(0.014)	(0.015)	(0.002)	(0.030)
Newspaper reading	-0.001	-0.001	0.000	0.002	0.005	0.006	0.001	-0.012	0.012**	0.016**	0.002**	-0.030**
	(0.008)	(0.005)	(0.002)	(0.011)	(0.005)	(0.007)	(0.001)	(0.012)	(0.005)	(0.007)	(0.001)	(0.013)
TV watching	0.007	0.005	-0.002	-0.011	-0.004	-0.005	-0.001	0.010	-0.010***	-0.013***	-0.002**	0.025***
	(0.006)	(0.004)	(0.001)	(0.008)	(0.004)	(0.005)	(0.001)	(0.009)	(0.003)	(0.004)	(0.001)	(0.008)
Happy	0.021	0.015	-0.005	-0.031	0.011	0.014	0.002	-0.026	0.021**	0.027**	0.004*	-0.053**
	(0.016)	(0.011)	(0.004)	(0.023)	(0.011)	(0.014)	(0.002)	(0.027)	(0.011)	(0.014)	(0.003)	(0.027)
Region, time and their interaction	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,415	1,415	1,415	1,415	1,416	1,416	1,416	1,416	1,417	1,417	1,417	1,417
Pseudo R2	0.0336	0.0336	0.0336	0.0336	0.0409	0.0409	0.0409	0.0409	0.0469	0.0469	0.0469	0.0469

Note: Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1. All specifications include covariates of gender (male), age, education, unemployment, household income.

Table 5.7 reports our second specification, which includes several personality factors that are likely to be associated with attitudes. In the first part of the table, we see that when we control for those factors (i.e. whether they feel safe, consider helping other people, ideology, media and happiness), the impact of the share of immigrants in the region on attitudes towards same race immigrants becomes more negative. In other words, 1 per cent increase in the share of immigrants in a given region decreases the probability of reporting "allow many" by 4.5 per cent (it was 2.6 per cent in the first specification) and increases the probability of reporting "allow none" by 6.6 per cent (it was 4.5 per cent in the first specification). This implies that the personality of individuals influences attitudes towards immigrants negatively, although the impacts of education and age are still the same. We also find that people who define their political orientation as close to left-wing hold positive sentiments towards immigrants.

The marginal effects of attitudes towards immigrants from a different race or ethnicity are also larger than before. This means natives hold a more negative view towards other ethnicities even after controlling for other factors. It is worth mentioning that natives with left ideology are more opposed to restricting immigrants from a different race.

Similar results are found in the model considering attitudes towards immigrants from poorer non-European countries in terms of the impact of the share of immigrants in the region (i.e. larger negative effect) as presented in the last part of the table. Attitudes towards poor immigrants are the most unfavourable across models. We surprisingly find that natives who think that it is important to help others hold anti-immigrant attitudes towards immigrants from poorer countries and also towards those from a different race. This finding implies that natives are not willing to help immigrants but other natives. People who are happy and from the left-wing are supportive of more immigration from poorer non-European countries. The effect of media differs between TV and newspapers. Spending more time on TV watching is associated with wanting fewer immigrants from poorer countries, although spending more time on reading newspapers is associated with allowing more immigrants to live in this country.

Table 5. 8 What immigrants do into Turkey, with personality regressors

	Place			Culture			Economy		
Variables	**Worse**	**Neither W nor B**	**Better**	**Undermined**	**Neither U nor E**	**Enriched**	**Bad**	**Neither B nor G**	**Good**
Log share of immigrants	0.073***	-0.026***	-0.047***	0.039	-0.010	-0.029	0.033	-0.011	-0.022
	(0.026)	(0.010)	(0.017)	(0.026)	(0.007)	(0.019)	(0.025)	(0.009)	(0.017)
Feeling safe	-0.031	0.011	0.020	-0.027	0.007	0.020	0.019	-0.006	-0.013
	(0.026)	(0.010)	(0.016)	(0.026)	(0.007)	(0.019)	(0.027)	(0.009)	(0.018)
Helping others	0.083**	-0.021***	-0.062**	0.048	-0.010	-0.038	0.028	-0.009	-0.019
	(0.036)	(0.006)	(0.031)	(0.044)	(0.008)	(0.036)	(0.041)	(0.012)	(0.029)
Trust on legal system	-0.046*	0.016*	0.029*	-0.028	0.007	0.021	-0.032	0.011	0.021
	(0.025)	(0.009)	(0.016)	(0.026)	(0.007)	(0.019)	(0.026)	(0.009)	(0.017)
Left	-0.062**	0.019**	0.043**	-0.071**	0.015***	0.056**	-0.030	0.010	0.021
	(0.028)	(0.008)	(0.021)	(0.029)	(0.005)	(0.024)	(0.029)	(0.009)	(0.020)
Newspaper reading	-0.010	0.004	0.007	-0.033***	0.009**	0.025***	-0.012	0.004	0.008
	(0.013)	(0.005)	(0.008)	(0.013)	(0.003)	(0.009)	(0.013)	(0.004)	(0.009)
TV watching	0.016*	-0.006*	-0.010*	0.022***	-0.006**	-0.016***	0.021**	-0.007**	-0.014**
	(0.008)	(0.003)	(0.005)	(0.008)	(0.002)	(0.006)	(0.008)	(0.003)	(0.005)
Happy	-0.028	0.010	0.018	-0.047*	0.012*	0.035*	-0.037	0.012	0.024
	(0.027)	(0.010)	(0.017)	(0.027)	(0.007)	(0.020)	(0.027)	(0.009)	(0.018)
Region, time and their interaction	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,435	1,435	1,435	1,435	1,435	1,435	1,435	1,435	1,435
Pseudo R2	0.0335	0.0335	0.0335	0.0466	0.0466	0.0466	0.0400	0.0400	0.0400

Note: Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1. All specifications include covariates of gender (male), age, education, unemployment, household income.

Table 5.8 demonstrates our results on attitudes with respect to the general impact of immigrants in the country. The first part of the table looks at individual attitudes about how immigrants affect the country as a place. The coefficients of the share of immigrants are larger than the specifications without the personality variables, which implies reported sentiments of individuals towards foreigners are more negative when we control for given factors. This means individual attitudes change with an individual's personality. As previously found, people who spend more time on watching TV hold negative attitudes towards immigrants and people who think helping others is important hold anti-immigrant sentiments. Expectedly, in this model individuals who define themselves as left-wing are less likely to think immigrants are bad for the country, just like people who trust the legal system, though this coefficient is only marginally significant.

Furthermore, in the middle part of Table 5.8, the results of the model considering the cultural dimension of attitudes are presented. We could not find a statistically significant impact of the share of immigrants in the region just as the first specification. People with left political orientation, happier people (only marginally significant) and those who read more newspaper are less likely to feel the country's culture is undermined by immigrants. In contrast, people who watch more TV hold a more negative view.

In the last part of the table which investigates natives' attitudes to the impact that immigrants have on the national economy, we could not find a statistically significant impact of the share of immigrants in a given region. The only significant coefficient in this model is that of TV watching, i.e. the more time spent watching TV, the more negative are attitudes about the role of immigrants in the national economy.

To summarise, in the first specification we aim to control for a standard set of socio-economic explanatory variables. Our findings of this specification suggest that the share of immigrants in the region has an important role in shaping attitudes towards immigrants. The estimates of the marginal effects across models are larger than any other control in this model such as age or education (see Appendix 3 for full results). We can say that the presence of immigrants in Turkey produces more anti-immigrant sentiments. Turkish people do not want to allow many immigrants from the same or a different race or from poorer countries; and they feel their country is affected negatively by such immigrants. In addition to ethnic concentration in the regions, age and education level are two crucial factors influencing individuals' stance against immigrants. The younger Turkish population is more supportive to allow immigrants

regardless of race and source country, and less likely to blame immigrants about Turkey's economy, culture or in general. The more educated Turkish population also support immigrants more. As education level increases, unfavourable attitudes decrease in society. However, coefficients of both age and education are quite smaller in comparison with that of the immigrant share variable.

In the later specification, we investigate whether other factors such as an individuals' political orientation, their happiness, exposure to media, and safety concerns also determine their attitudes towards immigrants. Results of this analysis suggest that the impacts of education, age and ethnic concentration in the region still exist in the same direction though the coefficients of the share of immigrants are even larger. Additionally, we see that people with a left ideology are more likely to feel positive about immigrants consistently across specifications. Interestingly, we find that reading newspapers and watching TV influence attitudes differently. Also, Turkish people are not willing to help immigrants, even though they think that helping others is important.

5.6. The role of media on the attitude formation

Given that newspapers seemed to have a very different impact on attitudes to immigrants than TV, we decided to analyse whether this is related to the content of these newspapers. To do this, we first carried out a content analysis of a newspaper.

5.6.1. Content analysis on the media

In this analysis, we use data from one of the best-selling newspapers, Hürriyet Daily News, in Turkey[20]. This newspaper was published by Dogan Group from 1994 to 2018 which was the leading player in the publishing and broadcasting sectors in the country. Dominant existence of this group in media (both TV and newspapers) makes our content analysis more valuable as it is likely to reflect general view of media in the country. As might be understood from the words of 'Turkey for the Turks' under the logo of the newspaper, this media source has a nationalist view. From the website of this newspaper, we searched for a number of key words -migrant, refugee, foreigner and minority for the year 2008 in both the news and columns. Table 1 in Appendix 3 presents results for December 2008. This study covers two rounds of European Social Survey, Round 2 and Round 4. Data collection period for the first round was 17/12/2005- 01-07/2006 and was 02/11/2008 – 17/05/2009 for the second round. Therefore,

[20] Unavailability of online historical content search hampers the access of the data of the top 2 newspapers (i.e. Posta and Zaman) in the country.

publications of one of the best-selling newspapers in December 2008 may present the view of media since the date is covered in the surveys. In the determination of whether that news evokes positive or negative impression, we rely on the use of words in that news. For example, if the news includes words like smuggling, human trafficking, prostitution or crime, we consider that news has a negative content towards those groups (i.e. migrant, refugee, foreigner and minority). Otherwise, if the news has a content that emphasizes tolerance, friendship, encouragement of the use of another language or non-native political representatives, we consider that news has a positive content towards those people. For this purpose, we do not only take into account the headlines but also look through the texts (especially in the case of unclear headlines). Unfortunately, this search is available only in Turkish language. The finding of our analysis show that 68.57 per cent of the news has negative attitudes towards migrant/refugee/foreigner/minority as expected because of the nationalist view of this newspaper. Consequently, we argue that the Turkish media has an unfavourable language about non-Turkish individuals in the country.

5.6.2. Results from media point of view

Generally speaking, people who spend more time watching TV hold negative attitudes towards immigrants, while people who spend more time reading newspapers hold positive sentiments. In the content analysis which was done by using one of the best-selling newspapers, we found that the contents of the news that is related to immigrants dominantly has a negative view, which is not very consistent with our results. There are two important factors that might influence the impact of newspaper reading on the attitudes. If those people who read more newspapers have a high level of household income, and/or if they are high-educated, we can expect they are less likely to be influenced by newspapers. Therefore, we have two further investigations in which one of them is on the income level and the other one is on the education level.

In the first analysis, we sub-divide our sample into high-income earners who have more than 1,200 TL household income and low-income earners who have less than 1,201 TL household income. If those people who read newspapers more are higher income earners, they might be less influenced by the negative content in the newspapers since the risk on their household income is probably lower (i.e., our findings support that natives with higher household income are more tolerant to immigrants) than low income earners. Our findings that are based on these two sub groups (i.e. lower and higher income earners) show that there is no significant impact

of newspaper reading on the attitude formation of high-income earners. Interestingly, we find that newspaper reading has two significant impacts in the group of natives with lower income. Namely, the fact that those natives are less likely to be positive to their culture is undermined due to immigration; and they are more likely to report allowing many immigrants from poorer countries[21]. It seems they are not worried about losing cultural identity or the potential pressure on wages/employment opportunities. Nevertheless, it is worth noting that subgrouping the sample means cutting our observations finer and this may cause some statistical problems. As might be seen from the tables in Appendix 3, there are only 354 high-income earners, which seems quite low.

In the second part of the analysis, we sub-divide the sample into two education groups. The first group represents people with more than high school education (i.e. more than 12 years of schooling). Our finding shows that there is no statistically significant impact of newspaper reading on the attitudes of the better educated Turkish population. In the second group, we consider people with high school and less education (i.e. maximum of 12 years of schooling). Findings on this group are perhaps surprising. We find a statistically significant impact of newspaper reading on two of our attitude variables. First, when low educated individuals read more newspapers, they are likely to hold positive attitudes towards immigrants from poorer countries outside Europe. Another significant effect is on the cultural side. When those natives read more, they are more likely to report that their culture is enriched due to immigration. As seen, high educated individuals do not change their minds, yet less educated individuals seem to keep more open minds that can influence their views.

After all, our findings imply that printed media (i.e., Hurriyet Daily News) in Turkey does not have a strong effect in provoking individuals against immigrants in the country. Surprisingly enough however, we see some positive effects on the attitudes towards national culture and poor immigrants. Yet, it should be noted that media covers a huge variety of sources and a very comprehensive investigation of media tools is beyond the scope of our study. Nevertheless, the content analysis of a best-selling newspaper in Turkey provides a considerable contribution to the literature on the media's view towards immigrants in the country.

5.7. Conclusion

In this investigation, the aim was to assess natives' attitudes towards immigrants by using attitudinal survey data from the 2004 and 2008 European Social Survey in the context of

[21] *See* Appendix 3 for a full range of results.

Turkey. Estimating ordered probit equations of the likelihood that people in the sample had negative attitudes towards immigrants, this chapter provides an analysis of the connections between a set of explanatory variables and attitudes towards immigrants.

According to the European Social Survey data, the preferences of almost half of the Turkish population is not to allow any immigrants from different races to live in Turkey, this is very negative in comparison with other countries included in the survey. We seek out which factors affect these negative attitudes towards immigrants.

The most obvious finding to emerge from our analysis is that the existence of immigrants in the localities generates an anti-immigrant stance amongst natives. We provide evidence that both economic and noneconomic factors are important in explaining attitudes. Generally speaking, young and more educated Turkish people are found to be more tolerant of immigrants. We could not find a significant impact of unemployment on individual preferences across specifications.

We also find that the political orientation of individuals influences their attitudes towards immigrants. People who define themselves as leftist are more in favour of immigrants. Besides, contrary to our expectations, individuals who spend more time on reading newspapers hold positive sentiments towards immigrants, while TV watchers are more likely to report negative sentiments. In the further investigation, that uses the same models but sub-groups of the sample (i.e. high/low income earners), we could not find any significant impact of newspaper reading for higher income earners. Yet, in the lower income group, we find that reading newspapers decreases the probability of reporting cultural life undermined and increases the probability of reporting allowing many immigrants from poorer non-European countries. Similar to income groups, we could not find a significant negative effect of media on education groups (i.e., high and low educated natives). Therefore, anti-immigrant discourses in the media do not seem to generate an important opposite stance against immigrants in Turkey.

Our findings on the immigrant concentrations across regions are mostly consistent with the literature that mainly focuses on European countries (see for example, Gang, Rivera-Batiz and Yun, 2002; Dustmann and Preston, 2001, Markaki and Longhi, 2013). Higher share of immigrants/foreigners in a region is associated with higher negative attitudes towards them.

Our research suggests that natives' anti-immigrant preferences of stem from mostly non-economic factors (e.g. unemployment or household income) do not explain those attitudes.

This means that attitudes are not very responsive to economic interventions. From a policy implications point of view, this might be an important factor to take into account.

CONCLUSION AND POLICY IMPLICATIONS

This study aims to investigate the impact of immigration on the labour market in Turkey and the attitudes in Turkish society towards immigrants. We started with an investigation of the employment outcome of natives, i.e. whether immigrants influence natives' employment rate. We rely on the Borjas skill-cell approach that utilises skill specific labour supply shocks to identify the impact of immigration. To tackle potential endogeneity due to the non-random location choice of immigrants, we also apply an IV analysis. Our findings show that the employment rate of natives is not sensitive to an immigrant labour supply shock at the local level. However, findings at the national level reveal that when the share of immigrants increased, the employment rate of natives decreases, which confirms the labour market competition hypothesis. This difference in the findings at two levels of the analysis might be related to natives' response to immigration that softens the impact at the local level. Movement of labour or capital into other provinces/regions, and task specialisation might be possible responses that natives give, though we look at only internal migration of natives in this context.

Therefore, in the second empirical part of this study, we look at the internal migration of natives by using the skill-cell approach, i.e. whether natives with a particular skill respond to immigrants with similar skills by voting with their feet at the province and region level. We expect that if natives relocate themselves when they face immigrant inflows, this may be reflected in a negligible impact of immigrants at localities due to dispersion of the effect across regions. Our findings support this suspicion that the native population considers the share of immigrants in a given locality in their relocation decision, which means natives move out when immigrant numbers increase in their provinces. So, they actually vote with their feet, although it is not very large in magnitude.

This finding motivates us to consider whether and how attitudes towards migrants impact on the location choices of natives. Eventually, in our final empirical chapter, we investigate preferences of natives towards immigrants. We employ an ordered probit model to explain our six categorical dependent variables, which are attitudes towards same race immigrants, different race immigrants, poorer non-European immigrants, and the role of immigrants on the national economy, culture and place, that measure natives' attitudes towards immigrants. Our findings indicate that when the share of immigrants increased in a given region, the probability of reporting negative attitudes increases in general. The inclusion of several explanatory

variables (i.e., individual opinions, beside socio-economic variables) in our ordinary response models does not change the results.

Negligible or zero -wage/employment- impact of immigration at local level is quite common in the literature as discussed in Section 3.2. However, our national level analysis suggests negative -though small and marginally significant- impact which reveals difference in identification of the impact. Our finding at national level is consistent with Borjas (2003, 2006) -the case of US-, despite it is smaller in magnitude. However, it is larger than Bonin (2005) and Facchini, Mayda and Mendola (2013) in which insignificant employment effect of immigration is concluded in the cases of Germany and South Africa, respectively. As a next step, the findings of Chapter 4, i.e. negative net effect of immigrants on internal migration of natives, support zero impact on the employment at local level because of neutralising effect of internal movements. Although our results are not as large as what Borjas (2006) found in the case of US, we can still conclude a negative response to immigrants. Taken together with the finding of Chapter 5, i.e. the more immigrants there were, the more negative attitudes towards immigrants were, this negative migration behaviour of natives seems also related to their attitudes to immigrants. The negative association between the size of minority group and attitudes towards that group is consistent with the literature that mainly focuses on European countries (e.g., Gang, Rivera-Batiz and Yun, 2002; Dustmann and Preston, 2001).

Main findings

The main results in Chapter 3 are at the national level to abstract geographical considerations that might influence the findings, though we first look at the impact at province level. The findings of Chapter 4 are at the province level as we investigate intra-regional relocation of natives. The final chapter, Chapter 5, provides the findings of individual attitudes towards immigrants.

The main findings of our analyses are given below:

1. *Immigrants lowered natives' employment opportunities at national level, while they have no effect at local level*

Our results suggest that the increased share of immigrants in a given province does not have any significant effect on the employment rates of similar skilled natives in that province. This means native individuals are not affected by immigrant supply shocks at the province level, which does not provide any evidence on the labour market competition hypothesis. However,

we find that an increased share of immigrants at the national level decreases the employment opportunities of similar skilled natives. This finding suggests that there exists a mechanism (i.e. inter-relocation of natives) between the local and the national level which clothes the impact of immigration at the local level.

2. *Younger natives lost more in terms of employment in the Turkish labour market and they voted with their feet*

In the analysis we look at heterogeneity across sub-groups of skills (i.e. low education, high education, low experience and high experience natives). We find a statistically significant negative impact of immigrants on the experience groups, but not on the education groups. This effect is stronger in the low experience group which consists of natives with less than 20 years of potential labour market experience. Hence, this confirms that the young face more labour market competition from immigrants in Turkey than the more experienced groups.

In the analysis of the internal mobility of natives due to immigration, we find a statistically significant positive relationship between the share of immigrants in a given province and out-migration from that province. This implies that young Turks who experienced larger negative employment effects responded to immigration more than other Turks.

3. *Natives were likely to leave their province of residence when the share of immigrants increased in their province*

Natives migrate somewhere else if the share of immigrants increases in their province of residence as we suspected. Even after controlling for other factors which are likely to influence the internal migration decision, such as GDP per capita per province, security, number of household members, etc., we find that the existence of immigrants in a given locality has still statistically significant impact on the natives' internal movements, although it is not quite large.

4. *Prosperity of a locality have positive impact on in-migration into that locality*

Our results indicate that GDP per capita has a significant impact on natives' in-migration into a given province in the country. So, increased income -GDP- in a given locality increases the in-migration of natives into that locality. As we expect the prosperity of a place is to be an important factor on this response.

5. *Prosperity matters in the out-migration decision of natives*

We find that higher GDP per capita and the employment rate of natives in a given province is associated with lower out-migration from that province. Yet, the presence of immigrants still increases the out-migration rate of natives, although the coefficient is smaller in magnitude than the in-migration rate. The coefficient of GDP is smaller in out-migration rate. This finding implies that (potential) in-migrant Turks consider labour market opportunities of a place before they move more than those of (potential) out-migrant Turks in that place. Nevertheless, both in and out migrant Turks do not seem willing to live together with immigrants.

6. *Natives hold more anti-immigrant attitudes when there exist more immigrants in their region*

Inter-relocation preferences of natives and their attitudes towards immigrants reflect the same conclusion: Turks do not want to live with *others*. Natives' anti-immigrant attitudes towards same race, different race, and poorer non-European immigrants are similar to each other, i.e. signs are the same, and magnitudes are not too different across categories.

7. *Young Turks are more tolerant*

Findings of Chapter 3 show young Turks lost their employment opportunity more than other groups in society. However, there is a negative association between the share of immigrants and out-migration of young Turks as found in Chapter 4. This means when immigrant numbers increase in a locality, young Turks do not prefer to leave that locality even though they experienced negative employment effect of immigrants. In Chapter 5 we also found that young Turks are more tolerant to immigrants. The reason behind internal migration response of this group might be explained by their positive attitudes towards immigrants.

8. *Natives are worried about the country and the national economy but not their culture*

Our findings show that natives are more likely to report that immigrants make the country a worse place and they are bad for the economy. However, we could not find any significant impact of immigrants on natives' attitudes towards culture. This finding might be because the majority of immigrants come from similar backgrounds, so, they are not detected as a threat to cultural identity. However, natives are instead concerned about their national economy and the country as a place.

9. *Attitudinal characteristics do not influence the key variable of interest in a different way*

In a further part of the analysis, we include attitudinal characteristics (i.e., feeling safe, helping others, trust in legal system, political ideology, media, and happiness) to see whether they affect our main findings about attitudes towards immigrants. Results indicate that reported attitudes towards same race, different race, and poorer immigrants are the same in sign, but more likely to be negative. This means that those individual characteristics are important in the attitude formation of an individual.

10. *Exposure to media serves to increase sympathy towards immigrants who suffer from similar hardship*

In the analysis of the role of the media (i.e. newspapers), we find that exposure to media does not have any impact on the high-educated and high-income earner group (i.e. high skill) of natives. As we find in Chapter 3, labour market opportunities of highly educated natives are not threatened by immigrants. This implies that exposure to media does not affect Turks who were not harmed by immigrants in the labour market. Yet, this exposure shows low income and low education Turks to be more welcoming towards poor immigrants, which reflects sympathy and support for people with similar disadvantages.

Policy implications

Immigration has both economic and social implications in host countries. Our study indicates that native workers and immigrants compete in the Turkish labour market. This competition decreases the employment opportunities of natives at national level. Particularly after the Syrian inflows, immigration became one of the key concerns of Turkish society. Even though the timing of our study does not reflect the latest flow of immigrants (e.g. Syrians), it still provides useful findings. Considering most entrants are fleeing conflicts in the near regions rather than economic migrants (like in the UK, for example), Turkey has difficulty in selecting immigrants according to their qualifications or fit to the needs of the Turkish labour market. In this context, the role of the Turkish government should be to minimise illegal entry (i.e. workers without a work permit) to the labour market that may cause unfair conditions for both natives (through the firms' motivation of employing illegal workers from much lower wage levels) and immigrants (through lower standards of work; for example, lack of insurance).

Our findings indicate that natives vote with their feet, but this reaction against immigration does not help natives improve their labour market outcome (i.e., employment rate). Low experience and low education Turks are prime actors in this context. If there are more labour market opportunities for young Turks, this would lower their movement across provinces. Additionally, improvement in the education level might help to reduce the negative impact of immigrants.

While labour market concerns are important in the effective management of immigration, relations between natives and immigrants are as important. Our findings show that Turkish people are not very tolerant toward immigrants irrespective of race, also they are more opposed if these immigrants are from poorer countries. Their concerns are not purely economy-oriented, natives are worried about the whole country as a place. Therefore, immigration policies should consider not only the economic welfare of natives but also their social welfare. Our findings show that Turks are unwilling to help others who are not from the same nation. This discriminative behaviour could be tackled through a more open-minded education system. The Turkish education system is not inclusive, but nationalist, as country's ruling over the history.

Along with central government, the local authorities in provinces also have an important role in this process. Our findings suggest that national culture is not affected by immigrants, which means immigrants are not seen as a threat to culture. Accordingly, this attitude might be a useful tool to get people from different backgrounds together. Local organisations may organise some events to welcome and introduce new cultures in a positive way to the native population. Events such as exhibitions, theatre performance, concerts, welcome parties (especially in schools for immigrant children), local publications to inform residents would help to create a warm ambiance, bearing in mind that immigrants in Turkey are mostly non-economic immigrants, which means they did not enter this country for better economic conditions. Instead, they had to flee from their home due to wars, conflicts or disasters. This situation makes them even more vulnerable. I believe that listening/watching/reading their stories will soften natives' hearts towards immigrants. Even though there might exist some individual actions for this, events that are organised and supported by authorities would be more visible and useful.

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APPENDICES

Appendix 1

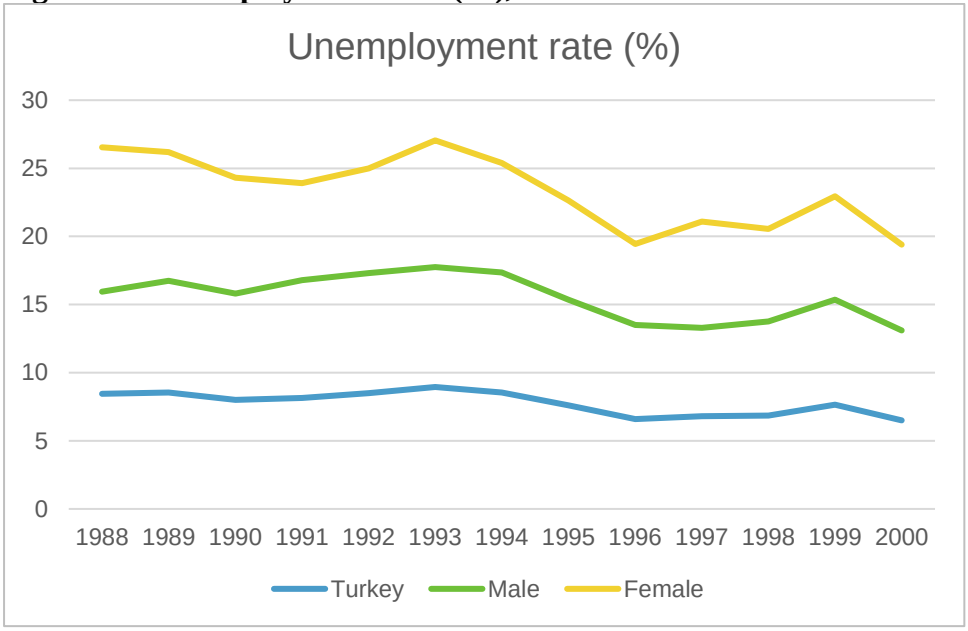
Table 3. 10 Regional classification in Turkey

12 Sub regions (NUTS-1)	26 Sub regions (NUTS-2)	Provinces (NUTS-3)
Istanbul Region (TR1)	Istanbul Sub region (TR10)	Istanbul Province (TR100)
West Marmara Region (TR2)	Tekirdağ Sub region (TR21)	Tekirdağ Province (TR211)
		Edirne Province (TR212)
		Kırklareli Province (TR213)
	Balıkesir Sub region (TR22)	Balıkesir Province (TR221)
		Çanakkale Province (TR222)
Aegean Region (TR3)	Izmir Sub region (TR31)	İzmir Province (TR310)
	Aydın Sub region (TR32)	Aydın Province (TR321)
		Denizli Province (TR322)
		Muğla Province (TR323)
	Manisa Sub region (TR33)	Manisa Province (TR331)
		Afyonkarahisar Province (TR332)
		Kütahya Province (TR333)
		Uşak Province (TR334)
East Marmara Region (TR4)	Bursa Sub region (TR41)	Bursa Province (TR411)
		Eskişehir Province (TR412)
		Bilecik Province (TR413)
	Kocaeli Sub region (TR42)	Kocaeli Province (TR421)
		Sakarya Province (TR422)
		Düzce Province (TR423)
		Bolu Province (TR424)
		Yalova Province (TR425)
West Anatolia Region (TR5)	Ankara Sub region (TR51)	Ankara Province (TR511)
	Konya Sub region (TR52)	Konya Province (TR521)
		Karaman Province (TR522)
Mediterranean Region (TR6)	Antalya Sub region (TR61)	Antalya Province (TR611)
		Isparta Province (TR612)
		Burdur Province (TR613)
	Adana Sub region (TR62)	Adana Province (TR621)
		Mersin Province (TR622)
	Hatay Sub region (TR63)	Hatay Province (TR631)
		Kahramanmaraş Osmaniye Province (TR633)
Central Anatolia Region (TR7)	Kırıkkale Sub region (TR71)	Kırıkkale Province (TR711)
		Aksaray Province (TR712)
		Niğde Province (TR713)
		Nevşehir Province (TR714)
		Kırşehir Province (TR715)
	Kayseri Sub region (TR72)	Kayseri Province (TR721)
		Sivas Province (TR722)
		Yozgat Province (TR723)
West Black Sea Region (TR8)	Zonguldak Sub region (TR81)	Zonguldak Province (TR811)
		Karabük Province (TR812)
		Bartın Province (TR813)

12 Sub regions (NUTS-1)	26 Sub regions (NUTS-2)	Provinces (NUTS-3)
	Kastamonu Sub region (TR82)	Kastamonu Province (TR821)
		Çankırı Province (TR822)
		Sinop Province (TR823)
	Samsun Sub region (TR83)	Samsun Province (TR831)
		Tokat Province (TR832)
		Çorum Province (TR833)
		Amasya Province (TR834)
East Black Sea Region (TR9)	Trabzon Sub region (TR90)	Trabzon Province (TR901)
		Ordu Province (TR902)
		Giresun Province (TR903)
		Rize Province (TR904)
		Artvin Province (TR905)
		Gümüşhane Province (TR906)
North East Anatolia	Erzurum Sub region (TRA1)	Erzurum Province (TRA11)
		Erzincan Province (TRA12)
		Bayburt Province (TRA13)
	Ağrı Sub region (TRA2)	Ağrı Province (TRA21)
		Kars Province (TRA22)
		Iğdır Province (TRA23)
		Ardahan Province (TRA24)
Central East Anatolia	Malatya Sub region (TRB1)	Malatya Province (TRB11)
		Elazığ Province (TRB12)
		Bingöl Province (TRB13)
		Tunceli Province (TRB14)
	Van Sub region (TRB2)	Van Province (TRB21)
		Muş Province (TRB22)
		Bitlis Province (TRB23)
		Hakkâri Province (TRB24)
SouthEast Anatolia	Gaziantep Sub region (TRC1)	Gaziantep Province (TRC11)
		Adıyaman Province (TRC12)
		Kilis Province (TRC13)
	Şanlıurfa Sub region (TRC2)	Şanlıurfa Province (TRC21)
		Diyarbakır Province (TRC22)
	Mardin Sub region (TRC3)	Mardin Province (TRC31)
		Batman Province (TRC32)
		Şırnak Province (TRC33)
		Siirt Province (TRC34)

Source: Eurostat, http://ec.europa.eu/eurostat/documents/345175/7773495/TR.pdf

Figure 3. 7 Unemployment rates (%), 1988-2000



Source: Turkish Statistical Institute, http://www.tuik.gov.tr/PreTablo.do?alt_id=1007

Table 3. 10 Unemployment effect of immigrants on natives at national level

	National level
Immigrant share (skill-groups)	0.0104*
	(0.0055)
Skill, year, (skill x year)	Yes
N	80
R^2	0.9938

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Note: The estimation sample includes only active working age men. Dependent variable is natives' unemployment rate which is generated as a share of unemployed natives over the total native population. The regressions are weighted by the sample size of skill-year.

Appendix 2

Table 4. 9 Descriptive statistics, in-migration rate

	in-migration rate				
Name of province	**Obs**	**Mean**	**Std. Dev.**	**Min**	**Max**
Tekirdağ	80	0.275713	0.164823	0	0.633403
Kocaeli	80	0.251589	0.139891	0.04557	0.624429
İstanbul	80	0.249805	0.178375	0.03801	0.779285
Antalya	80	0.246056	0.137621	0.029486	0.564231
Muğla	80	0.231625	0.138461	0	0.569808
Ankara	80	0.230281	0.161734	0.04546	0.720378
Kırklareli	80	0.221754	0.180192	0	0.666667
İzmir	80	0.214643	0.140181	0.053377	0.642421
Aydın	80	0.209242	0.118275	0.04102	0.567236
Bolu	80	0.197062	0.111794	0	0.454704
Çanakkale	80	0.195307	0.173107	0	0.583278
Erzincan	80	0.193633	0.151241	0	0.717944
Edirne	80	0.189218	0.168618	0	0.616838
Nevşehir	80	0.186387	0.10016	0	0.446659
Balıkesir	80	0.179421	0.142096	0	0.605734
Mersin	80	0.177455	0.091283	0.037998	0.454888
Bursa	80	0.174783	0.093475	0.051509	0.43789
Çankırı	78	0.172159	0.108629	0	0.459051
Bilecik	77	0.170933	0.149666	0	0.628511
Sakarya	80	0.162211	0.09827	0	0.372864
Manisa	80	0.161626	0.13188	0	0.621342
Kars	79	0.16077	0.155539	0	0.690434
Siirt	79	0.156447	0.173694	0	0.72777
Burdur	79	0.155911	0.134438	0	0.55126
Tunceli	74	0.154839	0.155236	0	0.503049
Isparta	80	0.154591	0.135443	0	0.509759
Artvin	79	0.15337	0.118775	0	0.464272
Denizli	80	0.151945	0.118557	0	0.452424
Amasya	80	0.149184	0.137509	0	0.55513
Sivas	80	0.149127	0.115237	0	0.566667
Eskişehir	80	0.148274	0.10036	0	0.432861
Gümüşhane	79	0.143587	0.104508	0	0.432338
Kayseri	80	0.140338	0.085852	0	0.390035
Ağrı	78	0.138764	0.133249	0	0.485262
Hakkâri	75	0.136817	0.156258	0	0.564082
Erzurum	80	0.134109	0.118488	0	0.527351
Rize	79	0.130327	0.100093	0	0.438715
Elazığ	80	0.130283	0.099797	0	0.417127
Diyarbakır	80	0.130074	0.120117	0	0.469676

in-migration rate					
Name of province	**Obs**	**Mean**	**Std. Dev.**	**Min**	**Max**
Bingöl	76	0.128564	0.122343	0	0.440618
Niğde	80	0.127817	0.102983	0	0.45473
Adana	80	0.12614	0.076315	0.032082	0.377546
Van	78	0.12609	0.129164	0	0.543235
Hatay	80	0.125361	0.109266	0	0.4842
Gaziantep	80	0.12524	0.104137	0	0.557842
Sinop	80	0.12289	0.104068	0	0.477381
Kütahya	80	0.121252	0.122014	0	0.513342
Uşak	78	0.120869	0.106692	0	0.45
Kırşehir	78	0.120301	0.092894	0	0.355556
Kastamonu	80	0.115959	0.100787	0	0.536375
Bitlis	79	0.115087	0.11869	0	0.547979
Çorum	80	0.113002	0.104484	0	0.425091
Yozgat	80	0.111153	0.091895	0	0.450536
Malatya	80	0.110887	0.094169	0	0.355983
Konya	80	0.108955	0.077651	0	0.331907
Mardin	79	0.106211	0.117255	0	0.559266
Muş	76	0.106074	0.111387	0	0.56852
Samsun	80	0.104367	0.096145	0	0.426331
Giresun	80	0.103915	0.085058	0	0.353778
Afyonkarahisar	80	0.103109	0.092915	0	0.414842
Zonguldak	80	0.101067	0.099533	0	0.430226
Şanlıurfa	80	0.098173	0.113794	0	0.47894
Ordu	80	0.094646	0.084338	0	0.420197
Adıyaman	79	0.093401	0.112318	0	0.577893
Tokat	80	0.092085	0.09387	0	0.476732
Trabzon	80	0.089939	0.062979	0	0.294904
Kahramanmaraş	80	0.079882	0.077968	0	0.385036

Table 4. 10 Descriptive statistics, out-migration rate

Out-migration rate					
Name of province	**Obs**	**Mean**	**Std. Dev.**	**Min**	**Max**
Tunceli	74	0.350855	0.202376	0	0.857143
Sinop	80	0.320723	0.24197	0	1.25
Kars	79	0.277118	0.186963	0.02264	1
Ağrı	78	0.26468	0.176417	0	0.739787
Mardin	79	0.261053	0.157886	0	0.653308
Muş	76	0.253227	0.191669	0	1
Bingöl	76	0.251076	0.172524	0	0.702307
Bitlis	79	0.250623	0.194007	0	1.2
Artvin	79	0.248427	0.192702	0	0.857051
Hakkâri	75	0.242041	0.224478	0	1
Kırşehir	78	0.240896	0.184399	0	0.690158
Van	78	0.238051	0.162386	0.028986	0.666667
Erzurum	80	0.23747	0.155715	0.004141	0.666667
Gümüşhane	79	0.237463	0.167486	0	0.707192
Amasya	80	0.236014	0.207508	0	1
Çorum	80	0.232211	0.170742	0	0.666667
Bilecik	77	0.230611	0.202103	0	1
Erzincan	80	0.228481	0.175879	0	0.666667
Rize	79	0.225634	0.173446	0	0.857143
Kastamonu	80	0.221987	0.165878	0	0.697046
Siirt	79	0.218024	0.148732	0	0.8
Sivas	80	0.214176	0.137231	0.001368	0.566667
Nevşehir	80	0.213297	0.16268	0	0.752941
Burdur	79	0.210207	0.192834	0	0.912281
Çankırı	78	0.207797	0.174472	0	0.717195
Diyarbakır	80	0.204218	0.127835	0.031507	0.666667
Yozgat	80	0.204002	0.143268	0	0.53591
Adıyaman	79	0.203467	0.13989	0	0.523426
Kırklareli	80	0.203331	0.159513	0	0.751323
Uşak	78	0.196351	0.180801	0	0.8
Edirne	80	0.194511	0.146179	0	0.604987
Tokat	80	0.184097	0.13555	0	0.584007
Samsun	80	0.183565	0.131838	0.009667	0.653784
Bolu	80	0.181737	0.121799	0	0.574138
Ordu	80	0.181691	0.13932	0.03105	0.666667
Çanakkale	80	0.177926	0.147951	0	0.627171
Tekirdağ	80	0.174116	0.12879	0	0.627351
Şanlıurfa	80	0.173329	0.101291	0	0.513001
Elazığ	80	0.173314	0.129525	0	0.617353
Malatya	80	0.172678	0.11535	0	0.52334
Niğde	80	0.171156	0.128279	0	0.539849
Kayseri	80	0.168831	0.113403	0	0.508495

Out-migration rate

Name of province	Obs	Mean	Std. Dev.	Min	Max
Eskişehir	80	0.161643	0.123694	0	0.600932
Zonguldak	80	0.166503	0.134535	0	0.516907
Kocaeli	80	0.165185	0.093637	0.004361	0.437139
Giresun	80	0.16334	0.138757	0	0.658552
Isparta	80	0.161259	0.14834	0	0.666667
Sakarya	80	0.160337	0.11612	0.003183	0.531364
Balıkesir	80	0.157681	0.120943	0	0.582169
Afyonkarahisar	80	0.148473	0.1197	0	0.505729
Muğla	80	0.148444	0.116145	0	0.478837
Trabzon	80	0.145111	0.11699	0.004464	0.608602
Aydın	80	0.143936	0.115527	0.002805	0.531307
Kahramanmaraş	80	0.140887	0.104221	0	0.421151
Adana	80	0.140132	0.090072	0.024463	0.404728
Hatay	80	0.139643	0.114251	0	0.525469
Manisa	80	0.13895	0.113209	0	0.541378
Kütahya	80	0.138045	0.124278	0	0.555349
Gaziantep	80	0.137445	0.109878	0	0.488061
Antalya	80	0.131624	0.088214	0.004722	0.402556
Denizli	80	0.129378	0.10605	0	0.533508
Ankara	80	0.125419	0.07037	0.026106	0.379803
Mersin	80	0.124404	0.084134	0.029902	0.416743
Konya	80	0.123316	0.099836	0	0.49258
Bursa	80	0.117736	0.094771	0.004353	0.522514
İzmir	80	0.110848	0.078058	0.004666	0.390329
İstanbul	80	0.098545	0.04212	0.043987	0.263117

Further investigation

Individuals can migrate into different localities due to various reasons. Our model in this paper absorbs several factors that can affect natives' decisions. In this section, we provide further investigation by separating possible factors that can explain natives' internal mobility in Turkey. Additional explanatory variables that have been utilised in this part are shown in the following table:

Table 4. 11 Summary statistics of further explanatory variables

Variable	Observation	Mean	SD	Min	Max
GDP	2,657	7.586	.531	6.391	8.852
# of household members	2,657	4.760	1.828	0	14
Security	2,657	.174	.379	0	1
Government job	2,657	.133	.215	0	1
Home ownership	2,657	.625	.228	0	1
Being married	2,657	.790	.277	0	1

The literature provides some insight into how certain groups of people behave in respect of their migration decision. One of the factors that can influence this behaviour is different development levels among localities. Variations in economic development among provinces seems to be associated with spatial sorting of interprovincial migration (Fan, 2005). Therefore, the economic development levels of provinces look like a suitable candidate to explain one of the channels of the internal migration decision. As a measure of economic development, we use GDP per capita at province level which has been provided by the Turkish Statistical Institute. We also consider Turkey's specific job market conditions. As demonstrated in Map 4.1 and Map 4.2, there is in-migration movement towards some of the Eastern provinces that might be explained by public sector employment. Because several positions in the public sector require a certain number of years of compulsory work in a particular region (in particular, teachers, health officers, military officers), compulsory transfers, transfers due to individual requests (e.g. family reasons, health reasons), or transfers that are based on changing demands (i.e. transfer of thousands of security staff to the South-East region of Turkey after the Syrian Civil War (2011) or the conflict between the terrorist group PKK and the Turkish army which required security staff in Eastern Turkey)[22] may explain mobility inside the country. In our data set, we have information on the individuals' occupations. However, we do not know whether

[22] See guidelines for detailed information on the relocation of public personnel from http://mevzuat.basbakanlik.gov.tr/Yonetmelikler.aspx (only available in Turkish)

they belong to the public sector. Yet, we determine some occupations that are most likely to be public sector employment, such as military service, education or religious service and generate a dummy variable, which is 1 if it is a government job and 0 otherwise.

In addition, Kim (2014) argues that renter population is associated with a higher level of residential mobility. The findings of Mulder and Malmberg (2014) also confirm that the likelihood of migration is less for homeowners. Therefore, it seems that home ownership status is likely to affect migration decision. As a result of this, we include the home ownership variable which is a dummy variable coded 1 if the home was owned and 0 otherwise. Furthermore, the literature also finds that having children or a large family is related to a lower probability of migration (Aydede, 2015; Mulder and Malmberg, 2014). Similarly, being married might affect individuals' decision making as another family related factor. Hence, to understand possible family related factors we control for the number of household members and being married variables in the model.

Moreover, security concerns or terrorism in a region might be an important factor that affects individuals' migration decision. It is expected that if a province has a security issue, in-migration into that province is likely to be lower, while out-migration from that province is likely to be higher. In 1994, fourteen provinces were determined by the government as regions with a state of emergency as a result of increased terrorism and security concerns (Yucesahin and Ozgur, 2006). Even though our data is from 1990, those regions are still not likely to be safe places even before 1994. Therefore, as a control for these security concerns we generate a dummy variable for those 14 provinces of emergency which are Adıyaman, Agrı, Bingöl, Bitlis, Diyarbakır, Elazıg, Hakkari, Mardin, Mus, Siirt, Tunceli, Van, Batman and Sırnak.

Since the characteristics of in-migrants and out-migrants are likely to be different, the same variables may not explain in-migration and out-migration in the same way (Garcia-Ferrer, 1980). For example, income opportunities can explain in-migration better than out-migration because of the fact that large numbers of migrants from a range of localities might be pulled by economic attractiveness of a given locality, while only a small number of migrants moves out of a certain locality (Perloff, 1960 cited in Greenwood, 1975). Therefore, we can expect GDP per capita across the provinces to explain the in-migration rate better. Nonetheless, the variable of having a government job, for example, can explain both directions of migration. It might reduce the likelihood of moving somewhere else due to compulsory work in a certain place and higher work protection, so less out-migration. On the contrary, job transfers which

may take place for new employees or currently employees might explain more in-migration into a given province. The net effect seems to depend on the relative frequency of mentioned factors.

Our findings in Chapter 3 find that employment rate of natives decrease when the share of immigrants increases at the national level. This implies that worsening employment opportunities might motivate natives to move out. Therefore, we include natives' employment rate in the final specification, given in column 7.

The following tables provide results for the in-migration rate and out-migration rate. To see the effect of each control, we include them one by one. However, we consider the final specification (the last column) in each table for the purpose of interpretation. In Table 4.12, we examine which factors might affect the internal mobility of natives, as well as immigration. As seen from the table, there is a positive and statistically significant relation between GDP and the in-migration rates of natives. This implies that the in-migration of natives into a particular province increases when GDP per capita in that province increases. Provinces where more opportunities exist attract people. Additionally, two family related variables, number of household members and being married, are associated with lower in-migration rates, which satisfies our expectation. Since the cost of migration increases when the number of family members increases, the relation is negative between them. In addition, the impact of home ownership is found to be negative and statistically significant, indicating that homeowners are less likely to migrate into a given province, consistent with the literature (Mulder and Malmberg, 2014). As we may expect, we find a significant and negative impact of having a government job that is explaining the in-migration of natives. This might be due to compulsory fixed term work or better working conditions in the public-sector jobs (e.g. job protection and provided benefits in this sector) relative to the private sector. Our main coefficient of interest (i.e. the share of immigrants) is, however, still negative-though smaller in magnitude and statistically significant, even after including several controls. Surprisingly, even after the inclusion of the natives' employment rate (captured in 1990), our main variable of interest (i.e. the share of immigrants in a given locality) remains the same and natives' employment rate is statistically not significant.

Table 4. 12 Factors towards in-migration, 1990

	In-migration rate						
Immigrant share (1985)	-0.009***	-0.009***	-0.007***	-0.007***	-0.005***	-0.004***	-0.004***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)
Log of GDP per capita	0.211***	0.211***	0.298***	0.294***	0.242***	0.214***	0.221***
	(0.057)	(0.057)	(0.043)	(0.042)	(0.032)	(0.032)	(0.033)
Security		0.193***	0.500***	0.476***	0.359***	0.334***	0.339***
		(0.056)	(0.043)	(0.042)	(0.032)	(0.032)	(0.032)
# of household members			-0.085***	-0.079***	-0.023***	-0.021***	-0.021***
			(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Government job				0.274***	-0.073***	-0.057**	-0.055**
				(0.028)	(0.022)	(0.022)	(0.022)
Home ownership					-0.695***	-0.701***	-0.701***
					(0.016)	(0.016)	(0.016)
Being married						-0.094***	-0.097***
						(0.019)	(0.020)
Natives' emp.							0.036
							(0.029)
Skill and	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	2,621	2,621	2,621	2,621	2,621	2,621	2,621
R^2	0.741	0.741	0.854	0.859	0.921	0.921	0.921

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

The results of potential factors that might affect the out-migratory behaviour of natives are demonstrated in Table 4.13. As expected, we find a negative and significant impact of GDP per capita. This implies that the out-migration of natives from a given province increases when GDP per capita in that province decreases. Additionally, having a government job increases out-migration rate. The impact of being married is positive, statistically significant and smaller than the impact in the in-migration rates above. This response of married men might be because of the role of men in the family, the head. This role involves earning money and keeping the family members well. Therefore, to improve living conditions of the family, men might migrate somewhere else. In contrast to the in-migration rate, we find a significant negative impact of the employment rate. So, when there are more employment opportunities in a given province, out-migration of natives from that province decreases as might be expected. Although we control for an extensive set of other variables that might affect where the native population choose to locate, the impact of immigration exists across different specifications.

Table 4. 13 Factors towards out-migration, 1990

	Out-migration rate						
Immigrant share (1985)	0.002***	0.002***	0.002***	0.002***	0.002***	0.002***	0.002***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Log of GDP per capita	-0.049*	-0.049*	-0.047*	-0.049*	-0.056**	-0.041	-0.060**
	(0.028)	(0.028)	(0.028)	(0.027)	(0.027)	(0.027)	(0.028)
Security		0.029	0.036	0.020	0.004	0.018	0.003
		(0.027)	(0.028)	(0.027)	(0.027)	(0.027)	(0.027)
# of household members			-0.002	0.002	0.009***	0.008***	0.008***
			(0.001)	(0.001)	(0.002)	(0.002)	(0.002)
Government job				0.188***	0.141***	0.132***	0.127***
				(0.018)	(0.019)	(0.019)	(0.019)
Home ownership					-0.093***	-0.090***	-0.089***
					(0.013)	(0.013)	(0.013)
Being married						0.051***	0.060***
						(0.016)	(0.017)
Natives' emp. rate							-0.101***
							(0.024)
Skill and province fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	2,621	2,621	2,621	2,621	2,621	2,621	2,621
R^2	0.741	0.741	0.854	0.859	0.921	0.921	0.921

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Note: Sample includes only working age active males. Standard errors are reported in parentheses at the province-skill group level. Dependent variable is in-migration rate. The regressions are at province level and include 67 provinces and weighted by the sample size of skill- province.

Overall, when we consider the final specifications in each table there is no significant change in the magnitudes and signs of impact of the various variables influencing the in-migration and out-migration rates. However, this is an attempt to understand which other factors can explain the internal migration behaviour of natives and in what way. With regards to the in-migration of natives, GDP per capita at the province level has a positive impact on the location choice of internal native migrants. On the contrary, family related factors, being married and number of household members, decrease the in-migration rate, as does home ownership. However, the effect of home ownership is relatively large among other factors. When considering the out-migration rate, we see that it is negatively affected by an increase in GDP per capita. This impact is significant and smaller than its impact on in-migration. Another important finding is

that the security of a province seems to be a highly significant factor in explaining the in-migration of natives into provinces, although the impact on out-migration is statistically not significant. With regard to our security measure, we should note that the emergency situation (started in 1987 in 14 provinces) was rescinded completely by 2002, although it was earlier in some of the provinces. Under the state of emergency, individuals were not free to move (they often had to leave their lands through government enforcement). When certain areas were settled, the government started to return those populations which had been replaced due to emergency cases in the region (Aker et al., 2005). Those returns and the government's enforcement on those natives may influence our coefficient in the model. Another interesting finding is the employment rate of natives. While it is not significant to explain in-migration of natives, it is statistically significant factor to explain out-migration. This means that the employment rate in a locality is concerned by natives in their out-migration decision.

Appendix 3

Table 5. 9 Results of content analysis, Hürriyet Daily News (December 2008)

Headline	Date	Mood of
Dublaj yerine Kürtçe altyazı	31.12.2008	+
Türkler dost canlısı	31.12.2008	+
Kuşadası'ndaki hırsızlık oranı yüzde 40 arttı	30.12.2008	-
İzmir'de 33 kaçak yakalandı	30.12.2008	-
Edirne'de 43 kaçak yakalandı	29.12.2008	-
Artvin'de fuhuş operasyonu	29.12.2008	-
Ankaraspor 16'lık yabancı alacak	27.12.2008	+
Derbilere yabancı hakem isteyebiliriz	25.12.2008	+
Sınır kapısında operasyon: 12 gözaltı	25.12.2008	-
İlk kez bir Rum'un ismi sokağa verildi	24.12.2008	+
Ermenilerden özür kampanyası açanlara	24.12.2008	-
Edremit Körfezi'nde kaçaktan geçilmiyor	23.12.2008	-
AKP İzmir'e göçmen aday arıyor	23.12.2008	+
Türklerden Kim Özür Dileyecek?	22.12.2008	+
Zorla bazlama!	22.12.2008	-
Edirne'de 65 kaçak yakalandı	22.12.2008	-
Cumhurbaşkanı: Soyum Müslüman ve	21.12.2008	-
CHP azınlıklara kucağını açacak	19.12.2008	+
Mülteciyim, mültecisin, mülteci	19.12.2008	+
Yabancı oyuncular yerlilere teslim	16.12.2008	+
Ermeni taşınmazları için iade veya tazminat	16.12.2008	-
TÜSİAD: Türkiye'de insan hakları	16.12.2008	-
Azınlıklarımız ile "Birinci Sınıf"	13.12.2008	-
'Geleceğini arayan' Türkiye'ye geliyor, 2	13.12.2008	-
ABD'li işsizler Türklere rakip olmaya	11.12.2008	-
Çok milliyetçiyim dadım bile Türk	11.12.2008	-
Rize'de İncil dağıtıldığı iddiası	11.12.2008	-
Yabancı şirketlerin sayısı üçe katlandı	10.12.2008	+
59 bin kişi Türkiye'ye iltica için başvurdu	9.12.2008	-
İzmir'de 19 kaçak yakalandı	7.12.2008	-
Ege'de Yunanistan'la ortak göçmen	6.12.2008	-
Fuhuş operasyonuna 10 tutuklama	5.12.2008	-
15 aşk evine polis baskını	2.12.2008	-
Kuşadası'nda 35 kaçak yakalandı	2.12.2008	-
Muğla'da fuhuş operasyonu	1.12.2008	-

Source: Hurriyet Daily News, http://www.hurriyet.com.tr/arama/#/?page=62&order=Yeniden%20Eskiye&where=/&how=Article,Column&or=gocmen%20multeci%20yabanci%20azinlik&startDate=01/01/2004&finishDate=31/12/2008&platform=/&isDetail=true

Table 5. 10 Whether natives would allow immigrants from same race/different race/poorer countries to live in Turkey

	same race				different race				poorer countries			
Variables	**Many**	**Some**	**A few**	**None**	**Many**	**Some**	**A few**	**None**	**Many**	**Some**	**A few**	**None**
Lagged share of immigrants	-0.026**	-0.021**	0.003**	0.045**	-0.022***	-0.033***	-0.008***	0.063***	-0.027***	-0.034***	-0.008***	0.068***
	(0.011)	(0.009)	(0.001)	(0.019)	(0.007)	(0.011)	(0.003)	(0.021)	(0.008)	(0.010)	(0.003)	(0.021)
Male	0.012	0.010	-0.001	-0.021	0.001	0.002	0.001	-0.004	0.002	0.002	0.001	-0.004
	(0.010)	(0.008)	(0.001)	(0.018)	(0.007)	(0.010)	(0.003)	(0.019)	(0.008)	(0.010)	(0.002)	(0.019)
Age-year born	0.001*	0.001*	-0.000	-0.001*	0.000*	0.001*	0.000*	-0.001*	0.001***	0.001***	0.000***	-0.002***
	(0.000)	(0.000)	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)	(0.001)
Education	0.006***	0.005***	-0.001***	-0.011***	0.005***	0.008***	0.002***	-0.015***	0.003**	0.003**	0.001**	-0.007**
	(0.001)	(0.001)	(0.000)	(0.003)	(0.001)	(0.001)	(0.000)	(0.003)	(0.001)	(0.001)	(0.000)	(0.003)
Unemployment	-0.013	-0.011	0.001	0.023	-0.005	-0.007	-0.002	0.014	-0.000	-0.001	-0.000	0.001
	(0.020)	(0.018)	(0.001)	(0.038)	(0.013)	(0.020)	(0.006)	(0.039)	(0.016)	(0.020)	(0.005)	(0.040)
Household income (TL)												
401-500	-0.026	-0.026	0.000	0.052	-0.013	-0.022	-0.007	0.042	-0.013	-0.017	-0.005	0.035
	(0.018)	(0.017)	(0.001)	(0.035)	(0.012)	(0.019)	(0.006)	(0.037)	(0.014)	(0.019)	(0.005)	(0.038)
501-700	0.003	0.003	-0.000	-0.005	0.003	0.004	0.001	-0.008	0.008	0.010	0.002	-0.021
	(0.018)	(0.016)	(0.001)	(0.032)	(0.012)	(0.018)	(0.005)	(0.034)	(0.014)	(0.018)	(0.004)	(0.036)
701-800	0.009	0.008	-0.001	-0.016	0.007	0.010	0.002	-0.019	-0.003	-0.004	-0.001	0.007
	(0.020)	(0.017)	(0.002)	(0.035)	(0.013)	(0.019)	(0.005)	(0.037)	(0.015)	(0.019)	(0.005)	(0.039)
801-1000	0.000	0.000	-0.000	-0.001	0.001	0.001	0.000	-0.003	-0.008	-0.010	-0.003	0.021
	(0.023)	(0.019)	(0.002)	(0.040)	(0.014)	(0.021)	(0.005)	(0.041)	(0.016)	(0.021)	(0.006)	(0.042)
1001-1200	0.022	0.017	-0.003	-0.037	-0.000	-0.001	-0.000	0.001	0.019	0.022	0.004	-0.045
	(0.026)	(0.020)	(0.004)	(0.043)	(0.016)	(0.024)	(0.006)	(0.047)	(0.021)	(0.024)	(0.004)	(0.049)
1201-1500	0.042	0.030	-0.006	-0.065	0.006	0.008	0.002	-0.016	0.016	0.019	0.004	-0.039
	(0.034)	(0.022)	(0.007)	(0.049)	(0.020)	(0.029)	(0.007)	(0.055)	(0.024)	(0.027)	(0.005)	(0.056)
1501-1750	0.038	0.027	-0.006	-0.060	0.017	0.023	0.005	-0.044	-0.011	-0.015	-0.004	0.030
	(0.034)	(0.022)	(0.006)	(0.050)	(0.021)	(0.028)	(0.005)	(0.053)	(0.020)	(0.028)	(0.008)	(0.055)
1751-2500	0.104**	0.056***	-0.023	-0.137**	0.038	0.046	0.006*	-0.091	0.028	0.031	0.005	-0.064
	(0.052)	(0.020)	(0.015)	(0.056)	(0.032)	(0.035)	(0.004)	(0.069)	(0.035)	(0.036)	(0.004)	(0.074)
>2500	0.052	0.036	-0.009	-0.079	0.002	0.003	0.001	-0.005	0.011	0.013	0.003	-0.027
	(0.039)	(0.023)	(0.009)	(0.053)	(0.024)	(0.035)	(0.009)	(0.068)	(0.027)	(0.031)	(0.006)	(0.064)
Region, time and their interaction	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2,664	2,664	2,664	2,664	2,660	2,660	2,660	2,660	2,666	2,666	2,666	2,666

Table 5. 11 The role of immigrants in place, culture and economy, marginal effects on each category

	Place			Culture			Economy		
Variables	**Worse**	**Neither W nor B**	**Better**	**Undermined**	**Neither U nor E**	**Enriched**	**Bad**	**Neither B nor G**	**Good**
Lagged share of immigrants	0.061***	-0.027***	-0.034***	0.029	-0.009	-0.020	0.055***	-0.019***	-0.035***
	(0.020)	(0.009)	(0.011)	(0.019)	(0.006)	(0.013)	(0.019)	(0.007)	(0.012)
Male	-0.001	0.000	0.000	0.005	-0.002	-0.004	-0.015	0.005	0.010
	(0.019)	(0.008)	(0.011)	(0.020)	(0.006)	(0.013)	(0.020)	(0.007)	(0.013)
Age-year born	-0.002***	0.001***	0.001***	-0.002***	0.001***	0.001***	-0.002***	0.001***	0.002***
	(0.001)	(0.000)	(0.000)	(0.001)	(0.000)	(0.000)	(0.001)	(0.000)	(0.000)
Education	-0.009***	0.004***	0.005***	-0.008***	0.002**	0.005***	-0.007**	0.002**	0.004**
	(0.003)	(0.001)	(0.002)	(0.003)	(0.001)	(0.002)	(0.003)	(0.001)	(0.002)
Unemployment	-0.004	0.002	0.002	-0.049	0.013	0.035	-0.062	0.019*	0.043
	(0.041)	(0.018)	(0.023)	(0.038)	(0.009)	(0.030)	(0.040)	(0.010)	(0.030)
Household income (TL)									
401-500	-0.027	0.013	0.013	0.032	-0.011	-0.020	0.006	-0.002	-0.003
	(0.037)	(0.019)	(0.019)	(0.036)	(0.013)	(0.023)	(0.039)	(0.017)	(0.022)
501-700	-0.056	0.027	0.030*	-0.006	0.002	0.004	-0.052	0.021	0.032
	(0.035)	(0.017)	(0.018)	(0.034)	(0.011)	(0.023)	(0.036)	(0.015)	(0.021)
701-800	-0.060	0.028	0.032	0.004	-0.001	-0.002	-0.022	0.009	0.013
	(0.038)	(0.018)	(0.020)	(0.038)	(0.013)	(0.025)	(0.039)	(0.017)	(0.023)
801-1000	-0.030	0.015	0.015	-0.010	0.003	0.007	-0.084*	0.031*	0.053*
	(0.043)	(0.021)	(0.022)	(0.044)	(0.014)	(0.029)	(0.044)	(0.016)	(0.028)
1001-1200	-0.071	0.032	0.039	-0.053	0.015	0.038	-0.138***	0.044***	0.095***
	(0.046)	(0.020)	(0.026)	(0.047)	(0.013)	(0.035)	(0.045)	(0.014)	(0.032)
1201-1500	-0.085	0.037*	0.047	-0.042	0.012	0.029	-0.118**	0.040**	0.079**
	(0.053)	(0.022)	(0.032)	(0.051)	(0.014)	(0.037)	(0.051)	(0.016)	(0.036)
1501-1750	-0.112**	0.046**	0.066*	-0.103*	0.023**	0.080	-0.133**	0.043***	0.091**
	(0.057)	(0.021)	(0.038)	(0.060)	(0.011)	(0.051)	(0.057)	(0.016)	(0.043)
1751-2500	-0.093	0.040	0.053	-0.046	0.013	0.032	-0.107*	0.037**	0.070
	(0.070)	(0.026)	(0.045)	(0.072)	(0.019)	(0.053)	(0.060)	(0.018)	(0.043)
>2500	-0.040	0.019	0.020	-0.084	0.021	0.063	-0.106	0.037*	0.069
	(0.072)	(0.033)	(0.039)	(0.072)	(0.014)	(0.059)	(0.074)	(0.021)	(0.053)
Region, time and their interaction	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2,732	2,732	2,732	2,732	2,732	2,732	2,732	2,732	2,732

Table 5. 12 Whether natives would allow immigrants from same race/different race/poorer countries to live in Turkey, with personality regressors

	same race				different race				poorer countries			
Variables	**Many**	**Some**	**A few**	**None**	**Many**	**Some**	**A few**	**None**	**Many**	**Some**	**A few**	**None**
Lagged share of immigrants	-0.045**	-0.031**	0.010**	0.066**	-0.040***	-0.051***	-0.006**	0.097***	-0.048***	-0.061***	-0.010***	0.118***
	(0.019)	(0.013)	(0.004)	(0.028)	(0.013)	(0.016)	(0.003)	(0.031)	(0.013)	(0.016)	(0.004)	(0.031)
Male	0.019	0.013	-0.004	-0.028	-0.005	-0.007	-0.001	0.013	0.006	0.008	0.001	-0.016
	(0.015)	(0.011)	(0.003)	(0.023)	(0.011)	(0.014)	(0.002)	(0.026)	(0.010)	(0.013)	(0.002)	(0.026)
Age-year born	0.001*	0.001*	-0.000*	-0.001*	0.001	0.001	0.000	-0.001	0.001**	0.001**	0.000**	-0.002**
	(0.001)	(0.000)	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)	(0.001)
Education	0.007***	0.005***	-0.002***	-0.010***	0.006***	0.008***	0.001**	-0.015***	0.001	0.002	0.000	-0.004
	(0.002)	(0.002)	(0.001)	(0.003)	(0.002)	(0.002)	(0.000)	(0.004)	(0.002)	(0.002)	(0.000)	(0.004)
Unemployment	-0.022	-0.016	0.004	0.033	0.001	0.001	0.000	-0.002	-0.006	-0.008	-0.001	0.015
	(0.031)	(0.025)	(0.005)	(0.051)	(0.022)	(0.028)	(0.003)	(0.054)	(0.022)	(0.029)	(0.006)	(0.057)
Household income (TL)												
401-500	-0.052	-0.042*	0.009	0.085	-0.001	-0.002	-0.000	0.004	-0.016	-0.021	-0.003	0.040
	(0.033)	(0.026)	(0.008)	(0.052)	(0.023)	(0.032)	(0.006)	(0.061)	(0.025)	(0.031)	(0.005)	(0.061)
501-700	-0.008	-0.006	0.002	0.012	0.010	0.014	0.002	-0.026	-0.001	-0.001	-0.000	0.003
	(0.034)	(0.022)	(0.009)	(0.047)	(0.022)	(0.030)	(0.005)	(0.056)	(0.025)	(0.030)	(0.003)	(0.058)
701-800	-0.016	-0.011	0.004	0.024	0.005	0.007	0.001	-0.014	-0.020	-0.026	-0.005	0.051
	(0.035)	(0.023)	(0.009)	(0.049)	(0.022)	(0.030)	(0.005)	(0.057)	(0.024)	(0.030)	(0.005)	(0.058)
801-1000	-0.024	-0.017	0.005	0.036	-0.002	-0.003	-0.001	0.006	-0.014	-0.017	-0.003	0.034
	(0.036)	(0.025)	(0.009)	(0.053)	(0.023)	(0.032)	(0.006)	(0.061)	(0.025)	(0.031)	(0.005)	(0.061)
1001-1200	0.014	0.008	-0.004	-0.019	0.005	0.007	0.001	-0.012	0.015	0.016	0.001	-0.032
	(0.041)	(0.024)	(0.011)	(0.054)	(0.025)	(0.034)	(0.005)	(0.064)	(0.029)	(0.032)	(0.003)	(0.064)
1201-1500	0.005	0.003	-0.001	-0.006	0.018	0.022	0.002	-0.042	0.000	0.000	0.000	-0.000
	(0.046)	(0.028)	(0.012)	(0.061)	(0.029)	(0.037)	(0.005)	(0.070)	(0.031)	(0.036)	(0.004)	(0.071)
1501-1750	0.038	0.020	-0.011	-0.047	0.042	0.048	0.001	-0.092	-0.016	-0.020	-0.003	0.040
	(0.047)	(0.024)	(0.014)	(0.058)	(0.031)	(0.035)	(0.005)	(0.067)	(0.029)	(0.037)	(0.006)	(0.072)
1751-2500	0.110	0.039*	-0.037	-0.112	0.055	0.058	-0.000	-0.113	0.015	0.017	0.001	-0.033
	(0.077)	(0.021)	(0.028)	(0.068)	(0.053)	(0.048)	(0.009)	(0.095)	(0.048)	(0.051)	(0.003)	(0.101)
>2500	0.021	0.012	-0.006	-0.027	0.004	0.006	0.001	-0.011	0.007	0.008	0.001	-0.017
	(0.048)	(0.027)	(0.014)	(0.061)	(0.033)	(0.044)	(0.007)	(0.084)	(0.036)	(0.041)	(0.004)	(0.080)

Feeling safe	-0.011	-0.007	0.003	0.016	0.006	0.008	0.001	-0.016	-0.005	-0.006	-0.001	0.013
	(0.016)	(0.011)	(0.004)	(0.023)	(0.011)	(0.014)	(0.002)	(0.026)	(0.011)	(0.014)	(0.002)	(0.026)
Helping others	-0.046	-0.026	0.013	0.059	-0.021	-0.024	-0.001	0.046	-0.064**	-0.062***	-0.000	0.125***
	(0.036)	(0.016)	(0.011)	(0.041)	(0.024)	(0.025)	(0.001)	(0.049)	(0.026)	(0.020)	(0.004)	(0.042)
Trust on legal system	0.001	0.001	-0.000	-0.002	0.009	0.012	0.001	-0.023	0.001	0.002	0.000	-0.003
	(0.016)	(0.011)	(0.004)	(0.023)	(0.011)	(0.014)	(0.002)	(0.026)	(0.011)	(0.013)	(0.002)	(0.026)
Left	0.031*	0.020*	-0.008	-0.043*	0.036**	0.042***	0.002	-0.080***	0.032**	0.037**	0.004**	-0.073**
	(0.019)	(0.011)	(0.005)	(0.024)	(0.014)	(0.015)	(0.002)	(0.029)	(0.014)	(0.015)	(0.002)	(0.030)
Newspaper reading	-0.001	-0.001	0.000	0.002	0.005	0.006	0.001	-0.012	0.012**	0.016**	0.002**	-0.030**
	(0.008)	(0.005)	(0.002)	(0.011)	(0.005)	(0.007)	(0.001)	(0.012)	(0.005)	(0.007)	(0.001)	(0.013)
TV watching	0.007	0.005	-0.002	-0.011	-0.004	-0.005	-0.001	0.010	-0.010***	-0.013***	-0.002**	0.025***
	(0.006)	(0.004)	(0.001)	(0.008)	(0.004)	(0.005)	(0.001)	(0.009)	(0.003)	(0.004)	(0.001)	(0.008)
Happy	0.021	0.015	-0.005	-0.031	0.011	0.014	0.002	-0.026	0.021**	0.027**	0.004*	-0.053**
	(0.016)	(0.011)	(0.004)	(0.023)	(0.011)	(0.014)	(0.002)	(0.027)	(0.011)	(0.014)	(0.003)	(0.027)
Region, time and their interaction	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,415	1,415	1,415	1,415	1,416	1,416	1,416	1,416	1,417	1,417	1,417	1,417

Note: Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1.

Table 5. 13 The role of immigrants in place, culture and economy, marginal effects on each category, with personality regressors

	Place			Culture			Economy		
Variables	**Worse**	**Neither W nor B**	**Better**	**Undermined**	**Neither U nor E**	**Enriched**	**Bad**	**Neither B nor G**	**Good**
Lagged share of immigrants	0.073***	-0.026***	-0.047***	0.039	-0.010	-0.029	0.033	-0.011	-0.022
	(0.026)	(0.010)	(0.017)	(0.026)	(0.007)	(0.019)	(0.025)	(0.009)	(0.017)
Male	0.029	-0.010	-0.019	0.029	-0.007	-0.022	-0.017	0.006	0.011
	(0.025)	(0.009)	(0.017)	(0.025)	(0.007)	(0.019)	(0.027)	(0.009)	(0.018)
Age-year born	-0.003***	0.001***	0.002***	-0.002**	0.001**	0.002**	-0.002**	0.001**	0.002**
	(0.001)	(0.000)	(0.001)	(0.001)	(0.000)	(0.001)	(0.001)	(0.000)	(0.001)
Education	-0.010***	0.004***	0.007***	-0.005	0.001	0.004	-0.005	0.002	0.003
	(0.004)	(0.001)	(0.002)	(0.004)	(0.001)	(0.003)	(0.004)	(0.001)	(0.002)
Unemployment	-0.005	0.002	0.003	-0.011	0.003	0.008	-0.048	0.014	0.034
	(0.054)	(0.018)	(0.035)	(0.052)	(0.013)	(0.039)	(0.053)	(0.013)	(0.040)
Household income (TL)									
401-500	-0.019	0.007	0.012	0.071	-0.018	-0.053	0.045	-0.018	-0.027
	(0.058)	(0.021)	(0.036)	(0.058)	(0.014)	(0.045)	(0.062)	(0.024)	(0.038)
501-700	-0.027	0.010	0.017	0.044	-0.010	-0.035	0.011	-0.004	-0.007
	(0.055)	(0.020)	(0.035)	(0.053)	(0.011)	(0.043)	(0.056)	(0.020)	(0.036)
701-800	-0.002	0.001	0.001	0.092*	-0.025*	-0.067	0.058	-0.024	-0.035
	(0.057)	(0.022)	(0.035)	(0.055)	(0.013)	(0.043)	(0.058)	(0.022)	(0.036)
801-1000	0.008	-0.003	-0.005	0.039	-0.008	-0.031	-0.048	0.015	0.033
	(0.061)	(0.024)	(0.037)	(0.061)	(0.013)	(0.048)	(0.061)	(0.020)	(0.042)
1001-1200	-0.005	0.002	0.003	0.007	-0.001	-0.006	-0.099	0.024	0.075
	(0.063)	(0.024)	(0.039)	(0.063)	(0.011)	(0.052)	(0.063)	(0.018)	(0.047)
1201-1500	-0.012	0.005	0.008	0.043	-0.009	-0.034	-0.035	0.011	0.024
	(0.068)	(0.025)	(0.043)	(0.064)	(0.014)	(0.050)	(0.067)	(0.022)	(0.046)
1501-1750	-0.049	0.016	0.033	-0.036	0.004	0.031	-0.107	0.025	0.082
	(0.078)	(0.025)	(0.054)	(0.077)	(0.009)	(0.068)	(0.074)	(0.018)	(0.059)
1751-2500	-0.117	0.027	0.090	-0.003	0.001	0.003	-0.130	0.026	0.103
	(0.085)	(0.019)	(0.073)	(0.089)	(0.015)	(0.074)	(0.080)	(0.017)	(0.069)
>2500	0.018	-0.007	-0.010	-0.014	0.002	0.012	-0.029	0.009	0.019

	(0.088)	(0.036)	(0.051)	(0.088)	(0.013)	(0.075)	(0.093)	(0.029)	(0.064)
Feeling safe	-0.031	0.011	0.020	-0.027	0.007	0.020	0.019	-0.006	-0.013
	(0.026)	(0.010)	(0.016)	(0.026)	(0.007)	(0.019)	(0.027)	(0.009)	(0.018)
Helping others	0.083**	-0.021***	-0.062**	0.048	-0.010	-0.038	0.028	-0.009	-0.019
	(0.036)	(0.006)	(0.031)	(0.044)	(0.008)	(0.036)	(0.041)	(0.012)	(0.029)
Trust on legal system	-0.046*	0.016*	0.029*	-0.028	0.007	0.021	-0.032	0.011	0.021
	(0.025)	(0.009)	(0.016)	(0.026)	(0.007)	(0.019)	(0.026)	(0.009)	(0.017)
Left	-0.062**	0.019**	0.043**	-0.071**	0.015***	0.056**	-0.030	0.010	0.021
	(0.028)	(0.008)	(0.021)	(0.029)	(0.005)	(0.024)	(0.029)	(0.009)	(0.020)
Newspaper reading	-0.010	0.004	0.007	-0.033***	0.009**	0.025***	-0.012	0.004	0.008
	(0.013)	(0.005)	(0.008)	(0.013)	(0.003)	(0.009)	(0.013)	(0.004)	(0.009)
TV watching	0.016*	-0.006*	-0.010*	0.022***	-0.006**	-0.016***	0.021**	-0.007**	-0.014**
	(0.008)	(0.003)	(0.005)	(0.008)	(0.002)	(0.006)	(0.008)	(0.003)	(0.005)
Happy	-0.028	0.010	0.018	-0.047*	0.012*	0.035*	-0.037	0.012	0.024
	(0.027)	(0.010)	(0.017)	(0.027)	(0.007)	(0.020)	(0.027)	(0.009)	(0.018)
Region, time and their interaction	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,435	1,435	1,435	1,435	1,435	1,435	1,435	1,435	1,435

Note: Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1.

Table 5. 14 Whether natives would allow immigrants from same race/different race/poorer countries to live in Turkey, only higher income earners

	same race				different race				poorer countries			
Variables	**Many**	**Some**	**A few**	**None**	**Many**	**Some**	**A few**	**None**	**Many**	**Some**	**A few**	**None**
Lagged share of immigrants	-0.052**	-0.030*	0.021**	0.061**	-0.042**	-0.042**	-0.048**	0.006	0.083**	0.014	-0.001	-0.022
	(0.026)	(0.015)	(0.010)	(0.031)	(0.019)	(0.019)	(0.021)	(0.004)	(0.036)	(0.033)	(0.002)	(0.053)
Feeling safe	0.020	0.012	-0.008	-0.023	0.021	0.025	-0.003	-0.043	-0.014	-0.021	0.001	0.033
	(0.031)	(0.018)	(0.012)	(0.037)	(0.021)	(0.025)	(0.003)	(0.043)	(0.019)	(0.028)	(0.002)	(0.045)
Helping others	-0.008	-0.004	0.003	0.009	-0.033	-0.032	0.008	0.057	-0.112*	-0.101***	0.035	0.178***
	(0.060)	(0.032)	(0.025)	(0.067)	(0.049)	(0.042)	(0.015)	(0.076)	(0.063)	(0.033)	(0.027)	(0.067)
Trust on legal system	0.015	0.009	-0.006	-0.018	0.017	0.019	-0.003	-0.033	0.026	0.040	-0.002	-0.064
	(0.031)	(0.018)	(0.012)	(0.036)	(0.022)	(0.025)	(0.004)	(0.043)	(0.020)	(0.029)	(0.003)	(0.046)
Left	0.049	0.024	-0.021	-0.052	0.049	0.050*	-0.012	-0.087*	0.028	0.039	-0.004	-0.063
	(0.039)	(0.017)	(0.018)	(0.038)	(0.033)	(0.028)	(0.011)	(0.051)	(0.026)	(0.034)	(0.006)	(0.054)
Newspaper reading	**-0.009**	**-0.005**	**0.004**	**0.011**	**-0.006**	**-0.007**	**0.001**	**0.011**	**0.007**	**0.011**	**-0.001**	**-0.018**
	(0.022)	(0.013)	(0.009)	(0.026)	(0.015)	(0.017)	(0.002)	(0.029)	(0.014)	(0.021)	(0.001)	(0.034)
TV watching	0.020*	0.011*	-0.008	-0.023*	-0.003	-0.003	0.000	0.006	-0.001	-0.001	0.000	0.002
	(0.012)	(0.007)	(0.005)	(0.014)	(0.009)	(0.010)	(0.001)	(0.018)	(0.007)	(0.011)	(0.001)	(0.018)
Happy	0.038	0.023	-0.015	-0.046	0.017	0.020	-0.003	-0.034	0.011	0.017	-0.001	-0.027
	(0.031)	(0.019)	(0.013)	(0.037)	(0.023)	(0.027)	(0.004)	(0.046)	(0.019)	(0.030)	(0.002)	(0.047)
Observations	350	350	350	350	350	350	350	350	352	352	352	352
Pseudo R2	0.0624	0.0624	0.0624	0.0624	0.0732	0.0732	0.0732	0.0732	0.0512	0.0512	0.0512	0.0512

Note: Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1.

All covariates (i.e., male, age, education, unemployment and household income) and region, time and their interactions are included. Higher income earners are defined as individuals who have more than 1200 TL household income.

Table 5. 15 The role of immigrants in place, culture and economy, marginal effects on each category, only higher income earners

	Place			Culture			Economy		
Variables	**Worse**	**Neither W nor B**	**Better**	**Undermined**	**Neither U nor E**	**Enriched**	**Bad**	**Neither B nor G**	**Good**
Lagged share of immigrants	0.004	-0.001	-0.002	-0.010	0.001	0.009	0.044	-0.010	-0.034
	(0.041)	(0.014)	(0.028)	(0.041)	(0.005)	(0.036)	(0.044)	(0.011)	(0.034)
Feeling safe	-0.014	0.005	0.009	-0.013	0.002	0.011	0.021	-0.005	-0.016
	(0.043)	(0.015)	(0.029)	(0.044)	(0.006)	(0.038)	(0.049)	(0.011)	(0.038)
Helping others	0.141**	-0.011	-0.130*	0.133**	0.017	-0.150	0.101*	-0.008	-0.093
	(0.062)	(0.020)	(0.077)	(0.068)	(0.031)	(0.097)	(0.053)	(0.009)	(0.057)
Trust on legal system	0.014	-0.005	-0.010	0.013	-0.002	-0.011	0.057	-0.014	-0.043
	(0.046)	(0.015)	(0.031)	(0.046)	(0.006)	(0.040)	(0.046)	(0.012)	(0.035)
Left	-0.021	0.006	0.014	-0.055	0.003	0.051	0.031	-0.008	-0.023
	(0.053)	(0.016)	(0.037)	(0.053)	(0.004)	(0.053)	(0.061)	(0.018)	(0.044)
Newspaper reading	**0.016**	**-0.005**	**-0.011**	**-0.039**	**0.005**	**0.034**	**0.008**	**-0.002**	**-0.006**
	(0.026)	(0.009)	(0.018)	(0.028)	(0.004)	(0.025)	(0.027)	(0.006)	(0.020)
TV watching	0.001	-0.000	-0.000	0.008	-0.001	-0.007	0.018	-0.004	-0.014
	(0.017)	(0.006)	(0.011)	(0.017)	(0.002)	(0.015)	(0.018)	(0.004)	(0.013)
Happy	-0.066	0.022	0.044	-0.091*	0.012	0.079*	-0.038	0.009	0.029
	(0.047)	(0.016)	(0.032)	(0.047)	(0.009)	(0.041)	(0.049)	(0.012)	(0.037)
Observations	354	354	354	354	354	354	354	354	354
Pseudo R2	0.0711	0.0711	0.0711	0.0583	0.0583	0.0583	0.0412	0.0412	0.0412

Note: Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1.

All covariates (i.e., male, age, education, unemployment and household income) and region, time and their interactions are included. Higher income earners are defined as individuals who have more than 1200 TL household income.

Table 5. 16 Whether natives would allow immigrants from same race/different race/poorer countries to live in Turkey, only lower income earners

	same race				different race				poorer countries			
Variables	**Many**	**Some**	**A few**	**None**	**Many**	**Some**	**A few**	**None**	**Many**	**Some**	**A few**	**None**
Lagged share of immigrants	-0.040**	-0.029**	0.007**	0.062**	-0.036***	-0.047***	-0.009**	0.092***	-0.047***	-0.055***	-0.013***	0.114***
	(0.018)	(0.013)	(0.003)	(0.028)	(0.012)	(0.016)	(0.004)	(0.031)	(0.012)	(0.015)	(0.005)	(0.030)
Feeling safe	-0.020	-0.014	0.004	0.031	0.003	0.004	0.001	-0.007	-0.003	-0.003	-0.001	0.006
	(0.019)	(0.013)	(0.004)	(0.028)	(0.013)	(0.017)	(0.003)	(0.032)	(0.013)	(0.015)	(0.004)	(0.032)
Helping others	-0.055	-0.031*	0.013	0.073	-0.013	-0.016	-0.002	0.032	-0.047*	-0.046**	-0.005***	0.098**
	(0.043)	(0.018)	(0.012)	(0.049)	(0.026)	(0.030)	(0.003)	(0.060)	(0.028)	(0.023)	(0.002)	(0.050)
Trust on legal system	-0.008	-0.006	0.002	0.013	0.006	0.008	0.002	-0.016	-0.008	-0.009	-0.002	0.020
	(0.018)	(0.013)	(0.003)	(0.028)	(0.012)	(0.016)	(0.003)	(0.032)	(0.013)	(0.015)	(0.003)	(0.031)
Left	0.028	0.019	-0.006	-0.041	0.031*	0.037**	0.005**	-0.073**	0.029*	0.032*	0.006**	-0.067*
	(0.021)	(0.013)	(0.005)	(0.030)	(0.016)	(0.018)	(0.002)	(0.035)	(0.016)	(0.017)	(0.003)	(0.035)
Newspaper reading	**-0.002**	**-0.001**	**0.000**	**0.002**	**0.006**	**0.008**	**0.002**	**-0.016**	**0.013****	**0.015****	**0.004****	**-0.031****
	(0.008)	(0.006)	(0.001)	(0.013)	(0.005)	(0.007)	(0.001)	(0.014)	(0.006)	(0.007)	(0.002)	(0.014)
TV watching	0.004	0.003	-0.001	-0.006	-0.004	-0.006	-0.001	0.011	-0.012***	-0.015***	-0.003***	0.030***
	(0.006)	(0.004)	(0.001)	(0.009)	(0.004)	(0.005)	(0.001)	(0.010)	(0.004)	(0.005)	(0.001)	(0.010)
Happy	0.017	0.013	-0.003	-0.027	0.008	0.010	0.002	-0.020	0.025*	0.029*	0.007*	-0.061*
	(0.018)	(0.014)	(0.003)	(0.029)	(0.013)	(0.017)	(0.003)	(0.033)	(0.013)	(0.016)	(0.004)	(0.032)
Observations	1,065	1,065	1,065	1,065	1,066	1,066	1,066	1,066	1,065	1,065	1,065	1,065
Pseudo R2	0.0350	0.0350	0.0350	0.0350	0.0361	0.0361	0.0361	0.0361	0.0510	0.0510	0.0510	0.0510

Note: Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1.

All covariates (i.e., male, age, education, unemployment and household income) and region, time and their interactions are included. Lower income earners are defined as individuals who have more than 1201 TL household income.

Table 5. 17 The role of immigrants in place, culture and economy, marginal effects on each category, only lower income earners

	Place			Culture			Economy		
Variables	**Worse**	**Neither W nor B**	**Better**	**Undermined**	**Neither U nor E**	**Enriched**	**Bad**	**Neither B nor G**	**Good**
Lagged share of immigrants	0.068**	-0.025**	-0.044**	0.039	-0.011	-0.027	0.029	-0.010	-0.018
	(0.027)	(0.010)	(0.017)	(0.027)	(0.008)	(0.019)	(0.026)	(0.009)	(0.016)
Feeling safe	-0.030	0.011	0.019	-0.021	0.006	0.015	0.020	-0.007	-0.013
	(0.031)	(0.012)	(0.019)	(0.031)	(0.009)	(0.021)	(0.032)	(0.011)	(0.021)
Helping others	0.055	-0.017	-0.038	-0.004	0.001	0.003	-0.009	0.003	0.006
	(0.043)	(0.011)	(0.033)	(0.051)	(0.015)	(0.036)	(0.052)	(0.019)	(0.033)
Trust on legal system	-0.066**	0.024**	0.041**	-0.050	0.015	0.035*	-0.072**	0.026**	0.045**
	(0.029)	(0.011)	(0.018)	(0.030)	(0.009)	(0.021)	(0.030)	(0.011)	(0.019)
Left	-0.078**	0.024***	0.054**	-0.072**	0.018**	0.054**	-0.050	0.016	0.033
	(0.033)	(0.009)	(0.025)	(0.034)	(0.008)	(0.026)	(0.033)	(0.010)	(0.023)
Newspaper reading	**-0.015**	**0.005**	**0.010**	**-0.033****	**0.010****	**0.023****	**-0.017**	**0.006**	**0.011**
	(0.014)	(0.005)	(0.009)	(0.014)	(0.004)	(0.010)	(0.015)	(0.005)	(0.009)
TV watching	0.020**	-0.007**	-0.013**	0.024**	-0.007**	-0.017**	0.021**	-0.007**	-0.013**
	(0.009)	(0.003)	(0.006)	(0.010)	(0.003)	(0.007)	(0.009)	(0.003)	(0.006)
Happy	-0.020	0.007	0.013	-0.031	0.009	0.022	-0.032	0.012	0.021
	(0.032)	(0.012)	(0.020)	(0.032)	(0.010)	(0.023)	(0.032)	(0.012)	(0.020)
Observations	1,081	1,081	1,081	1,081	1,081	1,081	1,081	1,081	1,081
Pseudo R2	0.0390	0.0390	0.0390	0.0513	0.0513	0.0513	0.0493	0.0493	0.0493

Note: Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1.

All covariates (i.e., male, age, education, unemployment and household income) and region, time and their interactions are included. Lower income earners are defined as individuals who have more than 1201 TL household income.

Table 5. 18 Whether natives would allow immigrants from same race/different race/poorer countries to live in Turkey, only high-educated individuals

	same race				different race				poorer countries			
Variables	**Many**	**Some**	**A few**	**None**	**Many**	**Some**	**A few**	**None**	**Many**	**Some**	**A few**	**None**
Lagged share of immigrants	0.079	0.036	-0.036	-0.080	-0.001	-0.001	0.000	0.002	-0.022	-0.020	-0.001	0.043
	(0.074)	(0.035)	(0.034)	(0.075)	(0.057)	(0.045)	(0.014)	(0.088)	(0.052)	(0.049)	(0.002)	(0.102)
Feeling safe	-0.026	-0.011	0.012	0.026	0.009	0.008	-0.002	-0.015	0.001	0.001	0.000	-0.002
	(0.041)	(0.018)	(0.018)	(0.040)	(0.032)	(0.026)	(0.008)	(0.050)	(0.029)	(0.027)	(0.001)	(0.057)
Helping others	-0.265**	-0.006	0.126**	0.144***	-0.130	-0.061**	0.054	0.137	-0.090	-0.059	0.014	0.135
	(0.122)	(0.037)	(0.056)	(0.040)	(0.132)	(0.031)	(0.067)	(0.095)	(0.122)	(0.053)	(0.034)	(0.140)
Trust on legal system	0.050	0.022	-0.022	-0.050	0.037	0.029	-0.009	-0.057	0.016	0.015	0.000	-0.032
	(0.039)	(0.017)	(0.018)	(0.039)	(0.032)	(0.024)	(0.009)	(0.048)	(0.029)	(0.027)	(0.002)	(0.057)
Left	0.035	0.015	-0.016	-0.034	0.056	0.042	-0.016	-0.083*	0.035	0.031	0.000	-0.066
	(0.040)	(0.017)	(0.019)	(0.039)	(0.036)	(0.026)	(0.013)	(0.049)	(0.032)	(0.027)	(0.003)	(0.058)
Newspaper reading	**-0.006**	**-0.003**	**0.003**	**0.006**	**0.010**	**0.008**	**-0.003**	**-0.016**	**0.018**	**0.017**	**0.001**	**-0.036**
	(0.022)	(0.010)	(0.010)	(0.022)	(0.018)	(0.014)	(0.005)	(0.028)	(0.017)	(0.016)	(0.002)	(0.033)
TV watching	0.020	0.009	-0.009	-0.020	0.009	0.008	-0.002	-0.015	-0.002	-0.001	-0.000	0.003
	(0.017)	(0.007)	(0.008)	(0.016)	(0.013)	(0.010)	(0.003)	(0.019)	(0.012)	(0.012)	(0.000)	(0.024)
Happy	0.052	0.025	-0.023	-0.054	-0.000	-0.000	0.000	0.001	0.050*	0.049*	0.004	-0.102*
	(0.042)	(0.023)	(0.018)	(0.048)	(0.039)	(0.031)	(0.010)	(0.060)	(0.027)	(0.029)	(0.006)	(0.059)
Observations	233	233	233	233	233	233	233	233	234	234	234	234
Pseudo R2	0.117	0.117	0.117	0.117	0.111	0.111	0.111	0.111	0.124	0.124	0.124	0.124

Note: Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1.

All covariates (i.e., male, age, education, unemployment and household income) and region, time and their interactions are included. High-educated individuals are defined as individuals who have more than 12 years (i.e. high school) of schooling.

Table 5. 19 The role of immigrants in place, culture and economy, marginal effects on each category, only high-educated individuals

	Place			Culture			Economy		
Variables	**Worse**	**Neither W nor B**	**Better**	**Undermined**	**Neither U nor E**	**Enriched**	**Bad**	**Neither B nor G**	**Good**
Lagged share of immigrants	0.004	-0.001	-0.003	0.055	-0.007	-0.048	0.026	-0.008	-0.018
	(0.038)	(0.011)	(0.027)	(0.085)	(0.012)	(0.074)	(0.094)	(0.029)	(0.065)
Feeling safe	-0.018	0.005	0.013	-0.112**	0.019	0.094**	0.013	-0.004	-0.009
	(0.059)	(0.017)	(0.042)	(0.057)	(0.013)	(0.047)	(0.068)	(0.021)	(0.048)
Helping others	-0.166	0.077	0.089	-0.104	0.026	0.077	0.002	-0.001	-0.001
	(0.145)	(0.087)	(0.060)	(0.118)	(0.043)	(0.076)	(0.144)	(0.044)	(0.100)
Trust on legal system	0.011	-0.003	-0.008	-0.004	0.000	0.003	0.099*	-0.032	-0.067*
	(0.060)	(0.017)	(0.043)	(0.060)	(0.008)	(0.052)	(0.059)	(0.020)	(0.040)
Left	-0.109*	0.025*	0.085*	-0.157***	0.008	0.149***	-0.084	0.023	0.060
	(0.058)	(0.015)	(0.049)	(0.054)	(0.015)	(0.057)	(0.065)	(0.018)	(0.049)
Newspaper reading	**0.012**	**-0.003**	**-0.008**	**-0.036**	**0.005**	**0.031**	**0.016**	**-0.005**	**-0.011**
	(0.030)	(0.008)	(0.021)	(0.031)	(0.005)	(0.027)	(0.028)	(0.009)	(0.020)
TV watching	-0.017	0.005	0.013	0.012	-0.002	-0.010	-0.011	0.004	0.008
	(0.022)	(0.006)	(0.016)	(0.022)	(0.003)	(0.019)	(0.024)	(0.007)	(0.017)
Happy	-0.019	0.006	0.014	-0.038	0.005	0.032	-0.051	0.016	0.034
	(0.065)	(0.019)	(0.046)	(0.064)	(0.011)	(0.054)	(0.064)	(0.022)	(0.043)
Observations	235	235	235	235	235	235	235	235	235
Pseudo R2	0.0928	0.0928	0.0928	0.131	0.131	0.131	0.0986	0.0986	0.0986

Note: Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1.

All covariates (i.e., male, age, education, unemployment and household income) and region, time and their interactions are included. High-educated individuals are defined as individuals who have more than 12 years (i.e. high school) of schooling.

Table 5. 20 Whether natives would allow immigrants from same race/different race/poorer countries to live in Turkey, only low-educated individuals

	same race				different race				poorer countries			
Variables	**Many**	**Some**	**A few**	**None**	**Many**	**Some**	**A few**	**None**	**Many**	**Some**	**A few**	**None**
Lagged share of immigrants	-0.058***	-0.043***	0.010***	0.090***	-0.041***	-0.058***	-0.010**	0.109***	-0.047***	-0.063***	-0.011***	0.121***
	(0.019)	(0.014)	(0.004)	(0.030)	(0.013)	(0.018)	(0.004)	(0.033)	(0.013)	(0.017)	(0.004)	(0.032)
Feeling safe	-0.007	-0.005	0.001	0.010	0.006	0.009	0.002	-0.017	-0.005	-0.006	-0.001	0.012
	(0.017)	(0.012)	(0.003)	(0.026)	(0.011)	(0.016)	(0.003)	(0.030)	(0.011)	(0.015)	(0.003)	(0.029)
Helping others	-0.023	-0.016	0.005	0.034	-0.007	-0.009	-0.001	0.018	-0.046**	-0.051**	-0.003	0.100**
	(0.034)	(0.020)	(0.008)	(0.046)	(0.021)	(0.028)	(0.004)	(0.053)	(0.023)	(0.021)	(0.002)	(0.043)
Trust on legal system	-0.004	-0.003	0.001	0.007	0.006	0.009	0.002	-0.017	0.001	0.001	0.000	-0.002
	(0.017)	(0.012)	(0.003)	(0.026)	(0.011)	(0.016)	(0.003)	(0.029)	(0.011)	(0.015)	(0.003)	(0.028)
Left	0.037*	0.025*	-0.008	-0.054*	0.034**	0.043**	0.005**	-0.082**	0.038**	0.046***	0.005**	-0.089***
	(0.021)	(0.013)	(0.005)	(0.029)	(0.016)	(0.018)	(0.002)	(0.034)	(0.016)	(0.017)	(0.002)	(0.034)
Newspaper reading	0.002	0.002	-0.000	-0.003	0.005	0.007	0.001	-0.012	0.011**	0.015**	0.003*	-0.028**
	(0.008)	(0.006)	(0.001)	(0.013)	(0.005)	(0.007)	(0.001)	(0.013)	(0.005)	(0.007)	(0.001)	(0.014)
TV watching	0.006	0.005	-0.001	-0.010	-0.005	-0.007	-0.001	0.013	-0.011***	-0.014***	-0.003**	0.028***
	(0.006)	(0.004)	(0.001)	(0.009)	(0.003)	(0.005)	(0.001)	(0.009)	(0.004)	(0.005)	(0.001)	(0.009)
Happy	0.021	0.016	-0.004	-0.033	0.012	0.017	0.003	-0.033	0.019*	0.026*	0.005	-0.050*
	(0.017)	(0.013)	(0.003)	(0.027)	(0.011)	(0.016)	(0.003)	(0.030)	(0.012)	(0.016)	(0.003)	(0.030)
Observations	1,182	1,182	1,182	1,182	1,183	1,183	1,183	1,183	1,183	1,183	1,183	1,183
Pseudo R2	0.0352	0.0352	0.0352	0.0352	0.0372	0.0372	0.0372	0.0372	0.0540	0.0540	0.0540	0.0540

Note: Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1.

All covariates (i.e., male, age, education, unemployment and household income) and region, time and their interactions are included. Low-educated individuals are defined as individuals who have maximum of 12 years (i.e. high school) of schooling.

Table 5. 21 The role of immigrants in place, culture and economy, marginal effects on each category, only low-educated individuals

	Place			Culture			Economy		
Variables	**Worse**	**Neither W nor B**	**Better**	**Undermined**	**Neither U nor E**	**Enriched**	**Bad**	**Neither B nor G**	**Good**
Lagged share of immigrants	0.080***	-0.030***	-0.050***	0.040	-0.012	-0.029	0.035	-0.012	-0.023
	(0.029)	(0.012)	(0.018)	(0.028)	(0.008)	(0.020)	(0.027)	(0.010)	(0.018)
Feeling safe	-0.036	0.014	0.022	-0.009	0.003	0.006	0.015	-0.005	-0.010
	(0.029)	(0.012)	(0.017)	(0.029)	(0.009)	(0.021)	(0.030)	(0.010)	(0.019)
Helping others	0.091**	-0.025***	-0.066**	0.040	-0.010	-0.029	0.018	-0.006	-0.012
	(0.038)	(0.008)	(0.032)	(0.047)	(0.010)	(0.037)	(0.044)	(0.014)	(0.030)
Trust on legal system	-0.055**	0.021*	0.034**	-0.034	0.010	0.024	-0.056**	0.020*	0.036**
	(0.028)	(0.011)	(0.017)	(0.029)	(0.009)	(0.020)	(0.028)	(0.010)	(0.018)
Left	-0.061*	0.020**	0.040*	-0.047	0.012	0.035	-0.033	0.011	0.022
	(0.033)	(0.010)	(0.023)	(0.033)	(0.008)	(0.025)	(0.033)	(0.010)	(0.023)
Newspaper reading	**-0.013**	**0.005**	**0.008**	**-0.035****	**0.010****	**0.025****	**-0.017**	**0.006**	**0.011**
	(0.014)	(0.005)	(0.009)	(0.014)	(0.004)	(0.010)	(0.015)	(0.005)	(0.010)
TV watching	0.019**	-0.007**	-0.012**	0.023**	-0.007**	-0.016**	0.023**	-0.008**	-0.015**
	(0.009)	(0.003)	(0.005)	(0.009)	(0.003)	(0.006)	(0.009)	(0.003)	(0.006)
Happy	-0.026	0.010	0.016	-0.044	0.013	0.031	-0.032	0.011	0.021
	(0.030)	(0.012)	(0.019)	(0.030)	(0.009)	(0.021)	(0.030)	(0.011)	(0.020)
Observations	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200
Pseudo R2	0.0386	0.0386	0.0386	0.0502	0.0502	0.0502	0.0457	0.0457	0.0457

Note: Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1.

All covariates (i.e., male, age, education, unemployment and household income) and region, time and their interactions are included. Low-educated individuals are defined as individuals who have maximum of 12 years (i.e. high school) of schooling.