HACETTEPE UNIVERSITY INSTITUTE OF POPULATION STUDIES

DEMOGRAPHY PROGRAM

THE DETERMINANTS OF MIGRATION FROM TURKEY TO EUROPEAN COUNTRIES: A GRAVITY MODEL APPROACH

BERNA ŞAFAK ZÜLFİKAR SAVCI

Dissertation Submitted in Partial Fulfilment

of the Requirements for the Degree of Doctor of Philosophy

in Demography

Ankara

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ACCEPTANCE AND APPROVAL

This is to certify that we have read and examined this thesis and that in our opinion it is fully adequate, in scope and quality as a thesis for the degree of Doctor of Philosophy in Demography.

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Prof. Dr. A. Banu Ergöçmen

Director

To my parents and Umut Barış

ABSTRACT

THE DETERMINANTS OF MIGRATION FROM TURKEY TO EUROPEAN COUNTRIES: A GRAVITY MODEL APPROACH

Turkey has a longstanding history in international migration with its varying scope and magnitude of migratory movements. In terms of economic migration; emigration has become more evident in the 1960s when the migration of labor force has formed a migration corridor between Turkey and European countries over time. Despite the existence of vast literature on different aspects of this migration corridor between Turkey and European countries, a majority of studies have mostly been on theoretical basis neglecting empirical analyses that would reveal the accuracy of the explanations.

In this thesis, we analyzed the determinants of migration from Turkey to European countries between the years of 1960 and 2010 by using macro-level country data and panel data regression. In this regard, two approaches were followed. Firstly, a gravity analysis of emigration from Turkey to European countries was developed. Secondly, the inverted U-shaped relationship between development and emigration was examined using a quadratic form of models. Several datasets were used in line with the aim of the thesis: the Global Bilateral Migration Database was used to generate migrant stock as the dependent variable, datasets of UN DESA, CEPII, ILO, UNDP and DEMIG were used to generate the demographic, socio-economic and policy indicators to be used as independent variables.

Our findings indicate that the main determinants in the forming stage of the corridor marked by the labor recruitment agreements with European countries are total dependency ratio, GNP per capita and urbanization rate. But once a certain threshold level of migration was reached after this stage, emigration transformed into a self-perpetuating system. The results of the dynamic panel regression reveal that the emigrant stock who had migrated a while ago is the most significant determinant of the Turkey-European migration corridor. Findings further show that there is an inverted U-

curve relationship between emigration and the development level of destination countries relative to Turkey. Thus, it is revealed that emigrant stock is related to the development level of destination countries rather than that of Turkey.

This thesis contributes to the literature in several aspects; it (i) reveals the determinants of emigration from Turkey to European countries between the years of 1960 and 2010, (ii) assesses the relationship between emigrant stock and Turkey's development level, (iii) suggests a new conceptual framework to study the determinants of migration, (iv) emphasizes the parallelism between development theories and migration theories under certain time periods and (vi) explains emigration making use of different migration theories for different time periods.

ÖZET

TÜRKİYE'DEN AVRUPA ÜLKELERİNE GÖÇÜN BELİRLEYİCİLERİ: ÇEKİM MODELİ YAKLAŞIMI

Türkiye, göç hareketlerinin kapsamı ve büyüklüğü ile uluslararası göçte uzun yıllara dayanan bir geçmişe sahiptir. Ekonomik temelli dışa göç, işgücünün göçünün, zamanla Türkiye ile Avrupa ülkeleri arasında bir göç koridoru oluşturduğu 1960'lı yıllarda daha belirgin hale gelmiştir. Türkiye ve Avrupa ülkeleri arasında bu göç koridorunun farklı yönleri üzerine geniş bir literatür olmasına rağmen, çalışmaların büyük çoğunluğu teorik açıdan bu ilişkiyi incelemiş fakat açıklamaların doğruluğunu ortaya koyacak ampirik analizler çalışmaların çoğunda ihmal edilmiştir.

Bu çalışmada 1960 ve 2010 yılları arasında Türkiye'den Avrupa'ya göçün belirleyicileri makro düzeyde ülke verileri ve panel veri regresyonu kullanılarak analiz edilmiştir. Bu bağlamda, çalışmada iki yaklaşım takip edilmektedir. İlk olarak, Türkiye'den Avrupa ülkelerine göçün çekim modeli ile analizi yapılmıştır. Daha sonra ise, kalkınma ve göç arasındaki ters U-şeklindeki ilişki, ikinci dereceden bir model kullanılarak analiz edilmiştir. Tezin amacı doğrultusunda çeşitli veri setleri kullanılmıştır. Dünya Bankası'nın Göç Veri tabanı bağımlı değişken olarak kullanılan göçmen stokları verisini oluşturmak için kullanılırken, UN DESA, CEPII, ILO, UNDP ve DEMIG'in veri setleri bağımsız değişken olarak kullanılan demografik, sosyo-ekonomik ve politik göstergeleri oluşturmak için kullanılmıştır.

Bulgular Avrupa ülkeleri ile işgücü alım sözleşmeleri ile başlayan göç koridorunun oluşum aşamasındaki ana belirleyicilerin, toplam bağımlılık oranı, kişi başına düşen GSMH ve kentleşme oranı olduğunu göstermektedir. Ancak, belirli bir göç seviyesine erişildiğinde, göç kendi kendini besleyen bir sisteme dönüşmektedir. Dinamik panel regresyon sonuçları, bir süre önce göç etmiş olan göçmen stokunun, Türkiye-Avrupa göç koridorunun en önemli belirleyicisi olduğunu göstermektedir. Bulgular ayrıca, göç ile göç edilen ülkelerin Türkiye'ye oranla kalkınmışlık düzeyi arasında ters

yönlü U şeklinde ilişki olduğunu göstermektedir. Dolayısıyla göçmen stokunun, Türkiye'den ziyade göç edilen ülkelerin gelişme seviyesiyle ilişkili olduğu ortaya çıkmaktadır.

Bu tez literatüre çok çeşitli açılardan katkıda bulunmaktadır; (i) 1960 ve 2010 yılları arasında Türkiye'den Avrupa'ya olan göçün belirleyicilerini ortaya koymakta, (ii) Göçmen stoku ve Türkiye'nin kalkınma düzeyi arasındaki ilişkiyi incelemekte, (iii) göçün belirleyicilerini incelemek için yeni bir kavramsal çerçeve önermekte, (iv) belirli zaman dilimleri için kalkınma teorileri ve göç teorileri arasındaki paralelliği vurgulamakta ve (v) dışa göçü farklı zaman dilimleri için farklı göç teorilerini kullanarak açıklamaktadır.

ACKNOWLEDGEMENTS

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CHAPTER I: INTRODUCTION

The rise and complexity of global population movements in the past few decades brought the centuries old international migration phenomenon to the top of every agenda. Since international migration is associated with a wide range of global issues at the social, economic, demographic and cultural level, inevitably every country is somehow affected. Turkey with varying scope and magnitude of migratory movements has been one of the countries with a longstanding history in international migration. Thus, both global importance and multi-disciplinary natural of the issue and extend and character of migratory movements at the country specific level formed the basis in preferring the very subject of this thesis. Hence, the aim of this thesis is to analyze the determinants of migration from Turkey to European countries between the years of 1960 and 2010 by using macro-level country data and an econometric method.

Migration is defined as a fuzzy component of population change and contrary to birth and death, which are the other two components of population change; it is repeatable, reversible and sometimes invisible as it is in the case of irregular migration. Many people moving from various origin to various destinations with different motivations and for different durations of stay make the migration a complex and multi-dimensional demographic process (Coleman, 2009). Despite its complexity, migration has a crucial feature among other population components. It influences the population change and it moderates population ageing because it has direct and indirect effects in destination countries. The direct effect is related to change on the population size after the migration flow and indirect effect is related to age structure and fertility and mortality patterns change in destination countries following the migration flow. Due to these effects of migration, its level and volume is important for developed countries where declining fertility and population aging are among their demographic concerns therefore, developed countries have been magnet for international migration.

The statistics on the stock of international migrants and their distributions among areas emphasize the pulling effect of developed countries. There has been an increase in the acceleration of international migrants all over the world. The number of immigrants worldwide rose by 77 million and by 50 per cent between 1990 and 2013 and much of the increase occurred between the years of 2000 and 2010. The developed countries took their share from this accelerated immigrant stock. Sixty-nine percent of 77 million immigrants preferred the developed countries as destination countries. Most of these immigrants, whom stood at the number of 42 million among 53 million immigrants, were from developing regions. As regards the periods under study, 1990 2013, Europe has been one of the attractive regions for immigrants. One million people per year migrated to Europe between 1990 and 2013 and the origin countries of the migrants were diversified (UN DESA, 2013). The level of immigrants stock and descriptive analyses of the stocks lead to a consensus on the global increase in volume, trends and diversity of international migration (Czaika & De Haas, 2014). The perception about the increasing level of migration across Europe leads to an apprehension on losing their European identity. It is seen in the explanations as follows:

> "*Momentous changes are going on in Europe. Immigrants are arriving in unprecedented numbers, and they are re-shaping the structures and composition of European populations………. Populations are becoming much more diversified in their languages, ethnic groups and religion. Eventually, if recent trends continue, the self-identity and even the physical appearance of Europe's people will be changed. Migration is not irreversible*" (Coleman, 2009, p. 1).

The perceived continual increase in immigration and the perception that Europe is a global immigrant magnet is an increasing concern for immigrants in Europe. Due to this concern, immigration policies and migration strategies for immigrants are more frequent in time. On the other hand, the long-term period analysis emphasized the fact

that the world has not become more migratory in relative terms (Czaika & De Haas, 2014).

From time to time, European countries consider immigration as a problem while they sometimes consider it as a resolution. The reasons for this approach are the level of immigrant stock, the transformation of Europe into a destination, the decline in natural growth levels of the European countries, and the problem of population aging and immigration policy. Because of the multidimensional and complex nature of migration, it is one of the phenomena that will change many of the economic, political, demographic and socio-economic characteristics of European countries. For this reason, it is analyzed with an increasing interest.

Owing to the above reasons, immigration is a milestone for Europe and as a sending country it is important for Turkey as well. The main reason why it is important for Turkey is that it has become more evident in the 1960s; with the migration of labor force there has been a migration corridor between the European countries and Turkey over time. As it is mentioned by Castles (2008), Turkey was among the labor reserve of European labor market with that of the North African countries. Similarly, Skeldon (1997) expressed that Turkey as well as Morocco, Egypt, Mexico, the Philippines, Spain and Portugal are the labour frontiers, which dominated by emigration.

Of more than 5 million Turkish people living abroad 4 million have lived in the countries of Western Europe. It is forecasted that 5 million Turkish emigrants will increase to 8 million if return migration is considered (Turkey Ministry of Foreign Affairs). It has been indicated that the migration between Turkey and Western Europe has started with the guest worker system and it has been transformed to permanent labor force. According to Turkey Ministry of Foreign Affairs, Turkish emigration keeps its potential of increase as a result of family reunification and high-birth rate of the country relative to those of Western European countries. On the other hand, a majority of the scientific researches on different aspects of the migration corridor between Turkey and

European countries have mostly been on the theoretical basis neglecting the empirical analyses that would reveal the accuracy of the explanations.

In our study, the aim is to analyze the determinants of Turkish emigration to European countries between 1960 and 2010 based on the question of "what has been the motivation(s) of these 4 million people that have decided to migrate to European countries?" Not all EU-15 countries have been considered as the destination countries of this analysis since the migrant stock level has been at low-levels in Ireland, Portugal and Luxembourg. In addition to 12 countries of the EU-15, Switzerland and Norway were included in the study as to their level of migrant stock. Our focus in this thesis is on the factors that have been attractive in the decision of migration to destination countries. In other words, the question is to find out whether the social, economic and demographic features of these destination countries have been attractive in the decision-making or is it the repulsive conditions of the origin country.

In this regard, the following research questions are considered:

• What is the effect of demographic factors such as population size, age structure, fertility and mortality trends on the decision of migration from Turkey to European countries between 1960-2010?

• What is the effect of economic variables such as income differentials, unemployment rate or low level livings on Turkish migration to European countries?

• Does education level of Turkey and education level of destination countries affect the Turkish migrants' decision?

• Does a change in urban population either in Turkey or in destination countries affect the Turkish migration to European countries?

• What is the effect of migration network to attract the new migrants? Is Turkish migration to European countries self-perpetuating?

- Does a loosening migration policy affect the migration from Turkey to European countries?

- How is migration from Turkey to European countries between 1960-2010 classified?

- Which migration theories explain the Turkish migration experience? If there is time classification, which theories shape each period's migration pattern?

- What is the role of development; is there a relationship between Turkish migration experience and Turkish development level? Is the relationship linear or non-linear?

Most of the pioneers of the migration studies such as Castles (2003) explains the structure as a multi-dimensional and dynamic process. Therefore, research on migration has an interdisciplinary nature. Each discipline contributes theoretically and methodologically within its own field of interest.

There are two basic approaches in migration studies in modeling the migration. One of the approaches is based on equilibrium theories which includes neo-classical utility maximization theories. As a consequence of hegemony of neo-classical perspective at social science, equilibrium theory based modelings are widespread at migration studies. The other approach focuses on the effects of development on migration and there are limited number of studies which analyze the relationship. Equilibrium based analyses assume that people migrate from low-income country to high income country as parallel with the explanations of Ravenstein (1885). The rationale behind the perspective is considered as an extension of Ravenstein's law of migration and Lee's (1966) studies. According to this perspective, a set of factors in the origin country, which pushes people to migrate out and in the destination which pulls people to migrate in as regards the destination, so the migration decision is a disequilibrium between the areas problem (De Haas, 2010). The rationale behind the

migration decision is to increase the personal utility. The factors stimulate migration until the convergence between origin and destination has performed. The pioneers of this perspective commonly use gravity modeling as a method of analysis.

Another perspective, which considers development as a transformation process that affects the different structures of societies, considers migration as a part of the transformation of modernization, urbanization and demographic transition (De Haas, 2010). There is an inversely U-shape relationship between development level and emigration rather than a linear one.

In this study, above-mentioned two perspectives have been employed in analyzing the emigration from Turkey for the period of 1960-2010. In the first place, it is considered that development has a complex effect than a directly proportional effect. However, it should also be noted that development focused perspective has some methodological limitations which leads to disregarding the direct proportional effect of penetrating structures of the origin country. Thus, secondly, the directly proportional effect of social, economic and demographic structure of Turkey has been an important factor in employing both perspectives in the thesis.

Massey et al. (1993) divide migration theories into two parts that one group of theories are related to the decision of migration and the other group of theories are related to the expansion of international migration. Moreover, a distinction in gravity analysis has been made for the conventional method. First, the determinants of Turkish emigration decision to European countries are modeled by a static panel data regression. Then we use dynamic panel data regression method as an econometric analyses technique for finding out the determinants of international migration expansion. For testing the effects of development and for identifying the direction of relationship between development level of Turkey and Turkish emigration to European countries, we produce quadratic form models.

Briefly, our perspective on determining the decision migration are based on: (i) conventional neo-classical approach and gravity-type modeling methods and (ii) development-based perspective and quadratic form models. Although these two perspectives are considered to be conflicting with each other, they in fact are the different viewpoints of the same thought, which is explained as classical school. The development perspective focuses on human-based approach and it adopts the complexity of people's decision instead of monetary-based or utility approach. In the study, determinants of migration are addressed from a classical point of view. Therefore, migration theories, development theories, definitions and indicators are based on a number of macroeconomic, sociological and spatial studies.

Employing a macro-economic perspective in combination with demographic one and econometric modeling constitutes the strong aspects of this thesis. Furthermore, the findings of the study will be useful in evidence-based policy-making in order to understand the motivation behind the migration decision from Turkey to EU, as well as the migration pattern of Turkey. Specifically, the thesis contributes the literature in several aspects; (i) the study suggests a new conceptual framework to the determinants of migration studies, (ii) the study emphasizes the parallelism between development theories and migration theories under certain time periods, (iii) the study shows the effects of social networks in destination country as proved by empirical models and (iv) indicates the non-linear effect of transformations in Turkey's development level on Turkish emigration to European countries.

The thesis consists of six chapters. In the following chapter, chapter 2, a conceptual framework on Turkish migration to European countries between 1960 and 2010 is presented. In this regard, basic concepts and determinants the international migration and the linkage between development and migration are discussed. In the second chapter, basic determinants of migration are discussed based on a number of migration theories. Additionally, taking the multidimensionality of today's migration structure into account, we develop a new conceptual framework, which basically

emerged from the migration system theories, and the theoretical framework of Jennisen (2004). This conceptual framework explains the interdependency between migration and the factors related to various aspects of the country. Development and international migration have also been extensively assessed as well. This assessment includes the changes in the development term, the classification of development theories, the relationship between population and development, and the classification of migration and development theories periodically according to their similarities and differences.

The third chapter of the thesis conveys empirical studies on the factors that explain migration with the conceptual framework that has been developed in the second chapter. In addition to the empirical studies, literature surveys on the linkage between development and international migration and on modeling Turkish migration are given in this chapter.

Theoretical explanations of Turkish migration are focused on in the fourth chapter of the thesis. In chapter the migration between 1960 and 2010 is divided into two episodes, where relative migration theories are discussed in each episode. It is discussed which migration theory is valid for each episode. This chapter also includes explanations on Turkey's migration pattern that is expected to change with an increase in a level of development based on the mobility transition proposed by Zelinsky (1971).

The fifth section gives the description of the methodology of the study; data sets, models, and variables in the models. Chapter six of this thesis explains the basic findings according to models. The seventh chapter is the conclusion chapter where the findings are discussed.

CHAPTER II: CONCEPTUAL FRAMEWORK

International migration is studied in many areas of social sciences, and its place and importance in demography is different from other social sciences. Migration mobility is one of the components of demography. Migration causes significant changes in population size and population structure and leads to a change in socio-economic structure at many macro levels. On the other hand, immigration mobility is also influenced by the socio-economic structures of the societies and it is decided to migrate because these structures are sometimes pushing and sometimes pulling. It is therefore possible to talk about the interdependent relationship between migration and socio-economic factors.

Additionally, Massey et al. (1994) emphasized that migration studies mostly depended on descriptive analyses and they are limited to use testing of the theories. The limitation arises from (i) incomparable international migration data and (ii) scarcity about the commonly accepted theoretical framework in international migration studies (Jennisen, 2004). In this regard, the chapter of the thesis was built on explaining the difficulties in international migration data and statistics and on developing a comprehensive conceptual framework.

First of all, representative and comparable data limitation compeled us to explain basic definitions about migration and about international migration in the first part of the chapter. The definitions on international migration are essential to produce statistics on the issue. Since many definitions and categories used for migration classifications were also used for international migration, these commonly used definitions and terms were discussed at a later stage of the chapter without distinguishing between migration and international migration. In addition, sources of international migration statistics were explained. The ongoing sub-heading of the chapter discussed the determinants of international migration mobility and the

interrelationship between international migration and development in the aim of developing a comprehensive conceptual framework for international migration.

II.1. BASIC CONCEPTS ON MIGRATION AND INTERNATIONAL MIGRATION

Migration as one of the components of demographic change is defined as the "movement of individuals or groups which involves a permanent or semi-permanent change of usual residence" (Pressat, 1988). The multidimensional, dynamic and highly complex nature of migration is the challenging characteristics in defining the migration. Thus, there are various types of migration and these are showed in Figure II.1. However, a broad distinction is made between internal and international migration as Hinde (1998) puts it *"in the analyzing of migration, it is conventional to distinguish between international migration, involving a move from one country to another, and internal migration, involving a move within a country"* (Hinde, 1998, p:191).

Among the several dimensions considered to systematize and categorize space and time criteria are the core ones to define whether a movement is migration, or not. UN (1998) defines international migrant as a person who changes his or her country of usual residence (UN DESA, 1998). The usual place of residence is a distinctive feature for space criteria. It refers to dwelling in which a person lives most of the time. The space criterion does not constitute difficulties for international migration because international migration includes departure from a country (an origin country) and arrival to a destination country. Crossing the national borders on the purpose of changing the place of usual residence, where a person spends most of his/her daily activities, is used for space criterion of international migration (UNECE, 2001; UNFPA, 2011).

Time criterion is needed in order to distinguish between the temporarily and permanent change at the place of residence. International experts suggest strict time criterion in order to make distinction between the types of duration of stay. There are

two types of migrants by time criterion; (i) long-tern migrants and (ii) short-term migrants. According to UN definition, a long-term migrant is "*a person who moves to a country other than that of his or her usual residence for a period of at least a year (12 months)*". Short-term migrant is "a person who moves to a country other than his or her usual residence for a period of at least 3 months but less than 12 months (UNFPA, 2011).

The problem is that being a migrant is not a simply a matter of moving a certain distance and crossing some administrative borders for a certain length of time. It also involves an attitude of intention. The fact that being a migrant involves future intentions about whether to stay, or not (Newell, 1988). Newell (1988) explains the concept of intention by the following case. When a British executive going to work in Saudi-Arabia for years, he thinks himself as a visitor, not as a migrant. The purpose of collecting migrant data is important to define the migrant. On the other hand, it is clear that time and space criterion and concept of intention are the essential dimensions to systemize a universal and comparable migrant definition. The following illustration shows the systematization of migration by basic categories (UNFPA, 2011).

Figure II. 1: Basic Definitions and Criteria for Migration Statistics[1]
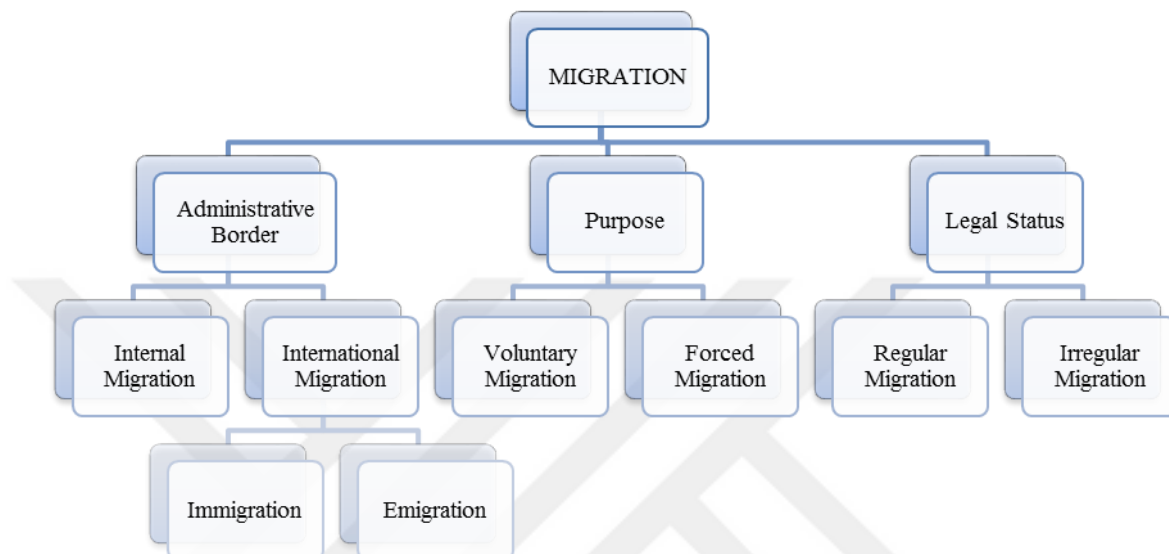
Source: (UNFPA, 2011)

Although there are different categories and definitions about migrant or types of migration, a narrow generalization about migrant's characteristics are mentioned in migration studies. It is known that not all ages tend to migrate another country; young adults generally decide to migrate to another country. Migration is mentioned as age-selective demographic component. Likewise age, sex differential is also important in migration. Males are more inclined to migrate and in the process of migration it is the males who migrate first followed by the females to another country. However, the sex-

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[1] The illustration shows different types of migration by basic categories. Specific types of migration are necessary to define. International Organisation for Migration (IOM)'s definitions are used to explain the specific types.

Emigration: "*The act of departing or exiting from one State with a view to settling in another (IOM)*".

Immigration: *"A process by which non-nationals move into a country for the purpose of settlement (IOM)."*

Forced Migration: "*A migratory movement in which an element of coercion exists, including threats to life and livelihood, whether arising from natural or man-made causes (e.g. movements of refugees and internally displaced persons as well as people displaced by natural or environmental disasters, chemical or nuclear disasters, famine, or development projects)(IOM)."*

Irregular Migration: "*Movement that takes place outside the regulatory norms of the sending, transit and receiving countries. There is no clear or universally accepted definition of irregular migration. From the perspective of destination countries it is entry, stay or work in a country without the necessary authorization or documents required under immigration regulations. From the perspective of the sending country, the irregularity is for example seen in cases in which a person crosses an international boundary without a valid passport or travel document or does not fulfil the administrative requirements for leaving the country. There is, however, a tendency to restrict the use of the term "illegal migration" to cases of smuggling of migrants and trafficking in persons (IOM)."*

selective nature of migration is questioned since demographic component, recent studies on migration discuss feminization of migration in consequence of high-level trend of increasing percentage of women among international migrants. Additionally, marital status of the individuals appears to be a distinctive feature in migration. The unmarried tend to move more than married because they are relatively younger and independent. Migrants are generally considered as more educated and more ambitious than non-migrants in migration studies of the late 20th century, whereas past migration flows were dominated by poorer population groups of the societies (Newell, 1988).

International migration is an important phenomenon for contemporary social science; it has risen to the top of the scientific agenda of various disciplines, including demography and economy. There is a continuously increase at flow and stock of international migrants in the world, hence collecting statistical data on international migration, measurement of its level and analyzing the phenomena is vital for countries. There are several sources that provide data on international migration. A researcher gathers statistics from census, administrative population register systems; surveys on migration, border statistics and residence permit register system.

Census includes questions on mobility and they provide information on migration stock[2]. Census generally involves several questions such as (i) country of citizenship (ii) ever resided abroad and year of arrival in the country (iii) previous place of usual residence and date of arrival in the current place in order to get information about migrant stock directly or indirectly (UNECE, 2001). Collecting migrant data from census lead to problems about adequate information on international migration. They generally gather information indirectly and exclude short-term international migration. Data generation from census on migrant flows is impossible because census' periods are generally 5 or 10 years (UNFPA, 2011).

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[2] Migration flow, migration stock and the differences between two statistics are explained in the following part of the section.

Administrative population registration system records the individual's administrative residence. The system provides information on international migration stock and international migration flow. The system enables to gather data on short-term migrants. The administrative registration systems are not well designed and useful to present a correct and sufficient level of migration data for all countries. European countries or developed countries have steady, institutionalised administrative register system, but many developing or underdeveloped countries have problems in conducting a register system.

Beside census and administrative population register system, border statistics and residence permit register system gather data about international migration. Countries generally have statistics on entry or exit visas. These border statistics, which are collected by different administrative units in the countries, are considered as secondary product of administrative practices. Though these micro data are produced for further processing, it is very difficult to interpret the statistics because these statistics comprise of work permit residence permit or asylum seeker application that are collected for administrative purposes. These data include incomplete or incomparable information. Furthermore, the rules of entry or work permit differ by migrants in destination countries (UNFPA, 2011).

Another source of international migration data is surveys. They include comprehensive questions, which scrutinize migration patterns, investigate the determinants of migration and analyse the relationship between migration and other socio-economic factors. It is clear that census does not enable to gather detailed information because they do not include complex retrospective questions to analyse migration flows (Newell, 1988). They generally include place of birth question, but the question only provides lifetime migrant information[3]. Researches do not generate data

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[3] Lifetime Migrant: "*A person whose area of residence at the census or survey date differs from his area of birth is a lifetime migrant*". (Manual VI).

about the frequency on migration, date of migration or return migration[4] from the place of birth question.

On the other hand, survey data may include migration history, which has questions about childhood place, length of the residence in the current place, previous place of residence, its type and reasons of migration. Though these kinds of surveys produce comprehensive information on migration, it is very hard to design and conduct international migration. There is very limited number such surveys.

The sources produce information on international migration, but the information transforms two different kinds of international migration statistics; migrant flow data and migrant stock data. Migrant stock data refers a country's "*foreign-born*" population or "*foreign-citizens*" population[5]. Migrant flow is the number of people migration from a country to another country for a specific time (UNFPA, 2011).

Among the demographic components, which formed the size and structure of a population, migration is more complex than the other two components; fertility and mortality. These two components are biological events and they occur once in an individual's life, but migration may repeat. Besides the complexity, crossing border is always shaped by country's administrative regulations by controlling entry, exit or permission to work or stay (Zlotnik, 1987).

II.2. THE DETERMINANTS OF INTERNATIONAL MIGRATION

There is no consensus on the volume of migration in our contemporary world. Castles and Miller (2003) asserted that the volume of migration has increased since 1945, on the other hand Czaika and De Haas (2014) considered that there was not a notable change at the volume of migration, the changes at migration pattern lead to

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[4] Return Migration: If a citizen of a country migrates to another country and then have returned permanently to his or her country, he/she will be called as a return migrant (Newell,1988)

[5] Foreign-born population: People who born outside of their country of residence. Foreign-born population is different from the foreign-citizen. A person may be a foreign-born as well as citizen of the country.
Foreign-citizens population: People are citizen of another country differently from their country of residence.

perception on world's becoming migratory. Although there has been a discussion on volume of migration, it is obvious that migration has been becoming more complex and more dynamic as a consequence of globalization (Bijak, 2006). The complex structure includes different sides of social life. Migration has linkages between several areas of social science such as sociology, political science, demography, economy, cultural studies and law (Bijak, 2006; Castles & Miller, 2003). As a result of the inter-disciplinary structure of migration, there are several migration theories, which investigate the motivations behind the migration decision. Massey et al., (1993) explained the complex structure and interdisciplinary theories of migration:

> *"At present, there is no single, coherent theory of international migration, only a fragmented set of theories that have developed largely in isolation form one another, sometimes but not always segmented by disciplinary boundaries. Current pattern and trends in immigration, however, suggest that a full understanding of contemporary migratory processes will not be achieved by relying on the tools of one discipline alone, or by focusing on a single level of analysis. Rather, their complex, multifaceted nature requires a sophisticated theory that incorporates a variety of perspectives, levels, and assumptions"* (Massey et al., 1993, p. 432).

In our study, we discussed the emigration experience from Turkey to Europe and explained the experience by several migration theories at the following section of the study. Especially at this section of the study we conceptualized migration by aggregation of factors, which used in migration theories. The problematic of the section was "why people decide to migrate" and "what are the factors behind the migration decision. The factors are the basic concepts of migration decision. These concepts were introduced at this section.

The first attempt to explain the factors or incentives behind the migration decision was Stouffer's (1940) study which use the "*intervening opportunities*

definition". According to the study, *"The number of persons going a given distance is directly proportional to the number of opportunities at that distance and inversely proportional to the number of intervening opportunities"* (Stouffer, 1940, p. 846). Although, Stouffer pointed out "pull and push factors" concept in the distribution of population literature, Lee theorized, *"pull and push factors approach"* by synthesizing the intervening opportunity theory. In the study, the factors, which decide to migrate, are summarized under four headings. These factors are "*(i) factors associated with the area of origin, (ii) factors associated with the area of destination, (iii) intervening obstacles and (iv) personal factors"* (Lee, 1966, p. 50). According to his study, every area has factors, which attract people to live or stay there, or which push to leave there. Migration is the result of a comparison of these factors at origin and destination.

Pull and push factors have been entirely used at almost all migration theories[6] as a conceptual framework since Lee's attempt. In current migration studies, push factors represent factors that repel people to cross the borders and these factors are closely related to economic conditions of the origin, political stability, environmental problems of origin. The pull factors are attractive factors such as economic opportunities, higher living conditions, welfare and freedom at destination. Muniz and Li (2011) explained these factors as complementary factors for each other. Migration is occurred when a lack of a factor at the origin is provided at destination. Several current theories use pull and push factor mechanism in order to investigate the determinants of migration. Some of the theories has focused on economics-based factors such as in the neo-classical migration theories, Keynesian migration theories or new economics of migration theory, some of them has focused on spatial factors like in the gravity theory, some of them has used networks mechanism. Shortly, most of the theories has conventional pull and push mechanism rationale, but the question is how they use the mechanism.

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[6] Most of the migration theories are based on the pull-push mechanism concepts, especially we see the rationale at economic-based migration theories.

When we examined the neo-classical macroeconomic migration theories (Harris & Todaro, 1970; Lewis, 1954; Massey et al., 1993), wage differentials were seen as the basic pull and push factor. As stated in these theories, international migration was the result of disequilibrium at labor market. Large endowment of labor relative to capital leads to low wages and unemployment. As a result of the wage differences, international migration flows from a country with large endowment of labor relative to capital to a country with low endowment of labor relative to capital. This movement provides equilibrium at labor market. Low wage at large labor endowment country is a push factor for the origin and high wage at low labor endowment country is a pull factor for the destination. As a result of the movement, wages will decrease at destination and increase at origin countries. In Keynesian approach, the rationale of pull and push factor mechanism is similar to explanations in neo-classical macroeconomic migration theories. Jennisen (2004) pointed out the difference between Keynesian approach and neo-classical macroeconomic migration theories that the push factor at the origin county and the pull factor at the destination country is unemployment (Bijak, 2006). In addition to unemployment as a factor at Keynesian approach, nominal wage expectation at destination is considered as a pull factor.

At the neo-classical microeconomic migration theories, we saw the pulls and pushes for migration movement. Sjaasted (1962)'s microeconomic model of individual choice and Borjas (1990)'s model for immigration market have shaped neo-classical microeconomic approach to migration (Bijak, 2006; Castles & Miller, 2003; Jennisen, 2004; Massey et al., 1993). Utility maximization expectation is the push factor for migration decision. In this view, migration is seen as an investment in human capital. It is believed that migration decision increases future gains by raising human capital (Castles & Miller, 2003). The rational individuals calculate their cost and benefit in order to maximize future gaining from the movement. Stark and Bloom (1985) introduced new economics of migration theory and they afflicted assumptions of neo-

classical approach. According to new economics of migration, people collectively[7] decide to migrate in order to maximize expected income and minimize risks (Massey et al., 1993). Clearly, risk minimization decision is considered as the push factor at the origin country and income maximization expectation is considered as the pull factor at the destination country.

Distinctively, Piore, (1979) propounded dual labor market theory in order to explain migration decision. The theory explains labor market structure for industrialized societies. He claimed that international migration was related to labor demand at the developed countries' labor market. Massey et al. (1993) explained dual labor market theory:

> *"... international migration is caused by a permanent demand for immigrant labor that is inherent to the economic structure of the developed nations. According to Piore, immigration is not caused by push factors in sending countries (low wages or high unemployment), but by pull factors in receiving countries (a chronic and unavoidable need for foreign workers)* (Massey et al., 1993, p. 440).*"*

Although pull and push factor rationale is based on sociological theories of migration, almost all economic theories of migration use the identical rationale in order to explain migration decision. In addition to the theories, international organizations such as World Bank or Eurostat use more complex pulls and pushes than considered in the theories to explain determinants of migration. Table II.1 shows categorization for migration motivations of World Bank (2007) as follows:

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[7] According to theory, migration decision unit is not individuals, migration is dependent to families or households' decision.

Table II. 1: World Bank Categorization for Migration Motivation

	Push Factors	Pull Factors
Economic and Demographic	Poverty Unemployment Low wages High fertility rates	Prospects of higher wages Potential for improved standard of living Personal or professional development
Political	Lack of basic health and education Conflict, insecurity, violence Poor governance Corruption Human rights abuses	Safety and security Political freedom
Social and Cultural	Discrimination based on ethnicity, gender, religion, and the like	Family reunification Ethnic (diaspora migration) homeland Freedom from discrimination

Source: World Bank, 2007

There are many empirical studies that test theories based on pull and push factor logic. The studies reveal that theories are often statistically meaningful, but nowadays the determinants of migration are more complex than the few push and pull factors described in the theories. Especially in recent years there have been many studies on immigration determinants, which led to the World Bank's classification above. While these studies provide more comprehensive results than the economic factors in the theories that are usually monetary-based, moving within a framework that includes multidimensional and dynamic structure of international migration will provide a more

comprehensive picture of today's migration determinants. Stouffer's (1940) intervening opportunities approach and Lee's (1966) developed pull and push factors of migration were the most common and first conceptual approaches used to identify determinants of migration. Later, international organizations such as the World Bank classified them by way of push and pull factors, which was the second most widely used approach in migration literature. In this study, the migration systems approach developed by Kritz, Lim, and Zlotnik (1992) was preferred to make an analysis that would be suitable for the dynamic and multidimensional nature of migration. Migration system theory is an attempt to conceptualize contemporary international migration by including several dimensions of migration decision. They explained that migration system approach was developed after the call for a system approach in order to capture the changing patterns of contemporary dynamic international migration. Castles and Miller (2003) emphasized comprehensiveness of migration system approach:

"The migration system approach is part of a trend towards a more inclusive and interdisciplinary understanding, which is emerging as a new mainstream of migration theory- at least outside the domain of neo-classical orthodoxy. The basic principle is that any migratory movement can be seen as the result of interacting macro- and micro- structures. Macro structures refer to large-scale institutional factors, while micro-structures embrace the networks, practices and beliefs of the migrants themselves. These two levels linked by a number of intermediate mechanisms, which are often referred to as meso-structures" (Castles & Miller, 2003, p. 27).

Migration system approach includes at least two countries and migration decision is related to several linkages in the society that are named as social, demographic, political, economic context and technological linkage in the approach. These contexts and linkage constitute the multi-dimensional structure of migration and affect the dynamic structure. In their framework, each context covers several indicators such as (i) welfare differentials and migrant networks for social context, (ii) wage and price differentials and regional blocks for economic context, (iii) fertility differentials and short-term travel links for demographic context and (iv) migration policies and

international relations for political context. The following figure shows their attempt to conceptualize a system approach. They emphasized especially two key points and one link in their study. These key points were spatial dimension to separate the systems and boundaries, time dimension to capture flow and counterflow. Network link was especially explained in order to answer the question of why only a subset of persons ever actually migrated:

> *"While economic and political structures and ties among nation states define the systems within which international migration flows are likely to occur, they do not explain who is likely to become a migrant or why only a subset of persons ever actually migrates. To answer these questions, it is necessary to look at the actual processes whereby macro conditions and policies connect to potential migrants. Those processes include networks of both institutions and individuals that assist with mobilization and recruitment of migrants and with actual organization of migration. Operating at and between macro and micro levels, networks link the various countries together into a coherent migration system* (Kritz et al., 1992).*"*

Figure II. 2: Migration system Framework for International Migration
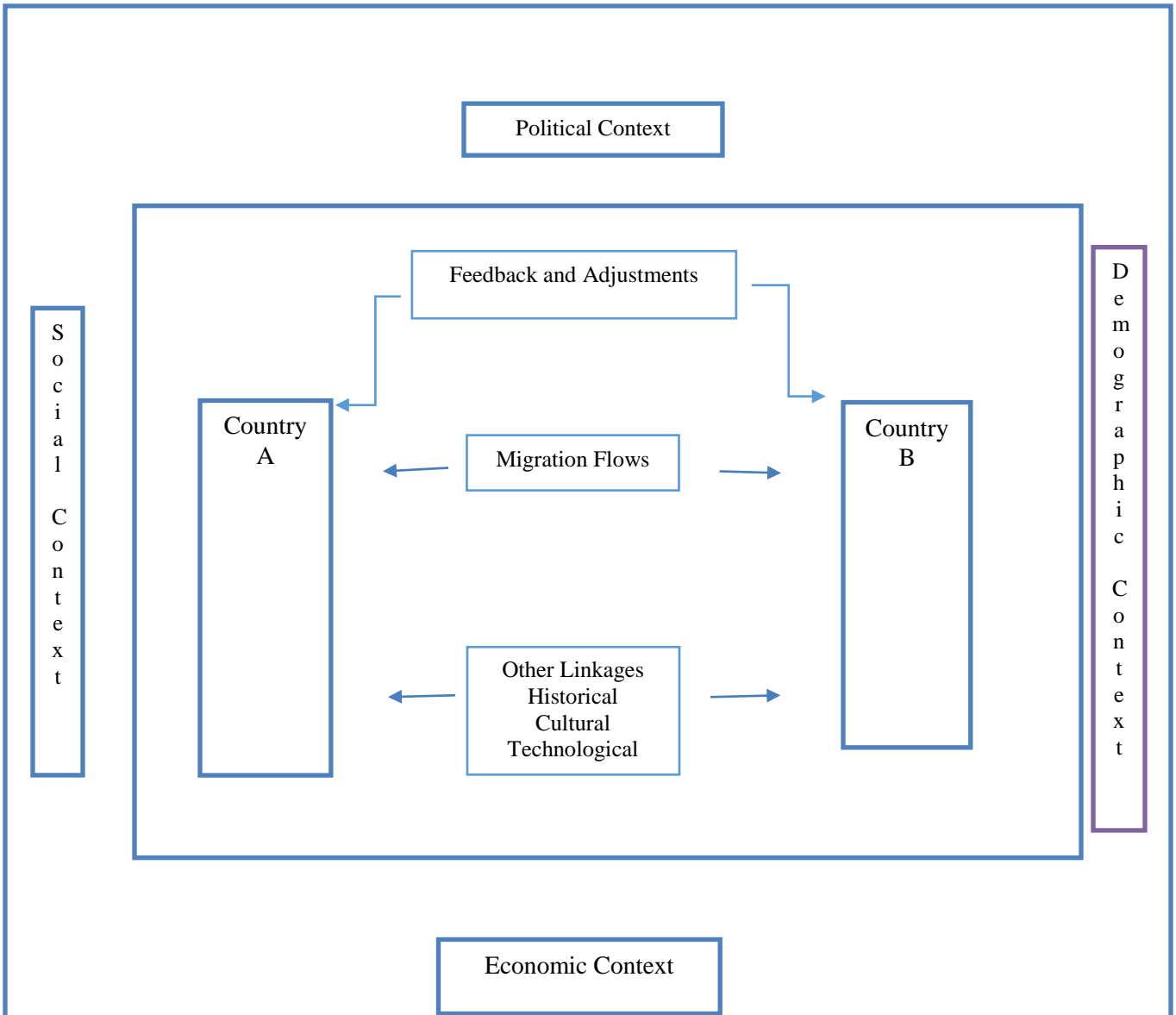
Source: Kritz, Lim and Zlotnik, 1992

After the development of migration system framework, Jennisen (2004) identified a theoretical framework that was extracted from migration system approach, but the new attempt includes the causality connections between the contexts. There are

four categories in the new system framework that investigates the impact of each context on international migration. These categories are economy, society, policy and linkages between countries that have causality between each of them. Similar to migration system framework, each category has several indicators or components. Economy category consists of income, employment and human capital. Cultural component express lifestyle and ethnicity and social component is related to inequality. Policy category covers political situation and migration policy. Linkages refer to cost of moving, distance and historical relationship such as colonial past or same language. Demographic context in migration system approach is classified under society component in new theoretical attempt (Jennisen, 2004). The causalities between each category and international migration are showed in the study. The framework includes three types of causality which are direct, indirect and reverse causalities of each category on international migration. The categories and causalities of Jennisen's study is showed at the following figure.

Figure II. 3: Jennisen's Theoretical Framework
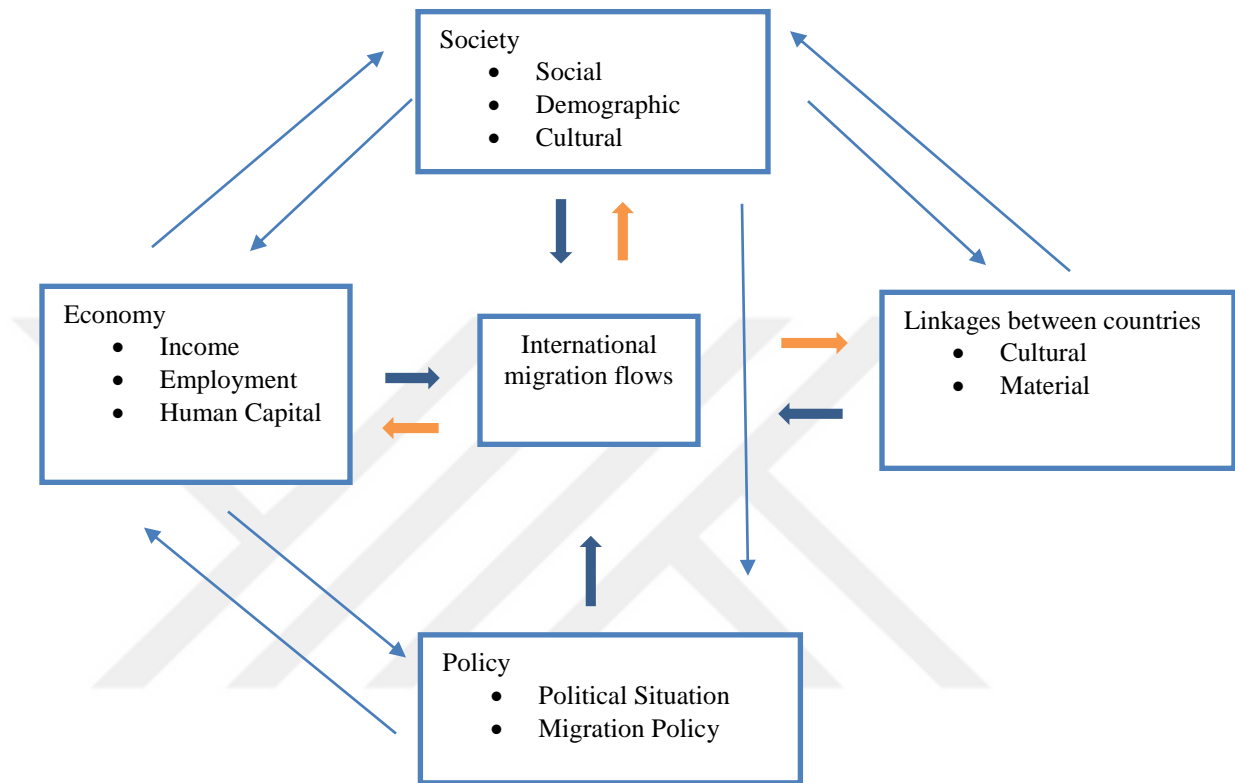
Source: Jennisen, 2004

Figure II.4 shows our framework and the rationale behind the models, which were explained at the fifth section of this thesis. We considered that demographic factors were the initiation factors for different sides of social life. Policy-makers have generally followed the changes at demographic indicators in order to prevent economic or social problems or design new social and economic policies. International migration is one of the aspects of social life that policy-makers take into consideration and demographic factors are the initial factors for international migration. In our study, demographic factors cover indicators related to population size, age structure, fertility and mortality. The changes at these indicators create sense of changes at economic structure, social life and international migration pattern. The sense induces new economic, social and migration policies.

In our study, we focused on the factors in three categories that are demographic factors category, economic factors category and social factors category. All categories have causalities among themselves. We thinked that each category had direct and indirect effects on international migration. The initiation factors category consists of four divergent components. Indicators related to population size component includes population size, population growth rate and population density. Most of the migration theories and studies focus on population size as a determinant of migration. In addition to population size, labor force is essential for migration studies. In this regard, we thinked that age structure of countries had impact on forming of international migration pattern. Median age, potential support ratio, total dependency ratio, old-age dependency ratio and child-dependency ratio were investigated in order to follow the direct and indirect effects of these indicators on international migration. Total fertility rate is a proxy of population size; accordingly, we considered that fertility had effects on divergent categories of our framework. We elaborated demographic factors category by life expectancy at birth and infant mortality rates. Furthermore, economic factors category covers conventional economic indicators of migration in migration theories which are unemployment rate, GDP per capita, wage level, labor market structure, poverty, deprivation and human capital. Urbanization, education level and networks between origin and destination countries are vital for social structure of societies and affect the international migration. Additionally, we conceptualized stimulating factors that affected migration decision directly. In our study, stimulating factors category is similar to Lee's intervening and obstacle factors. Distance between origin and destination countries has direct effect on international migration decision. In addition to distance, past or close historical relations, same language use and demanding migration

policies are augmented effect of migration. [8] The causalities and effects are showed at the following figure[9]:

Figure II. 4: Conceptual Framework for Migration Determinants

Stimulating Factors

Demographic Factors
- Population Size Age Structure
- Fertility
- Mortality

Economic Factors
- Unemployment
- GDP per capita
- Poverty
- Deprivation
- Wage level
- Labor market structure
- Human Capital

International Migration

Social Factors
- Networks
- Urbanization
- Education
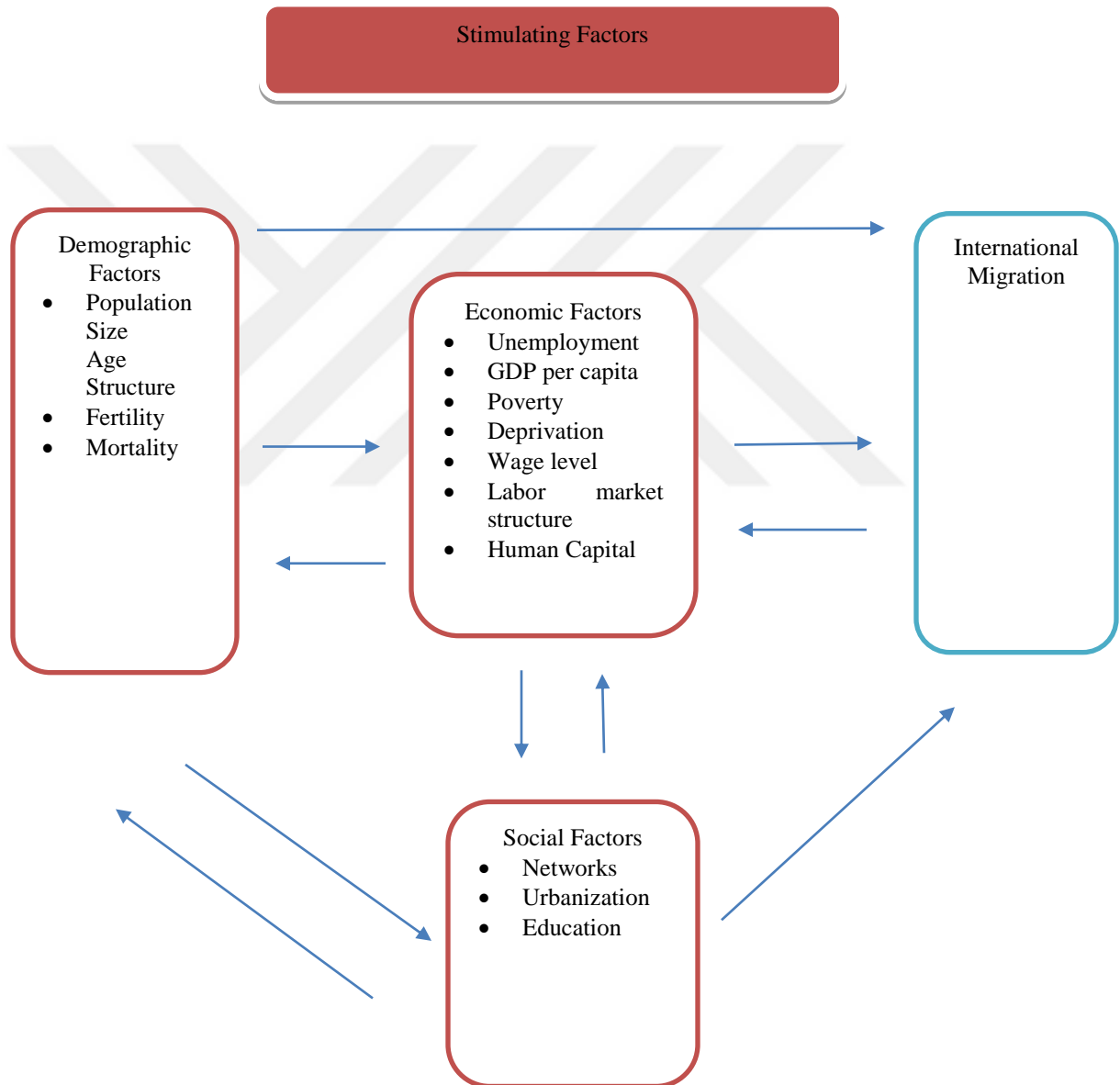
Source: Author's own elaboration

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[8] Culture and political stability of countries are considered as determinants of migration decision in most of theoretical migration studies. In our study, we accept that analyzing all sides of emigration decision is very problematic and we exclude culture and political stability of countries in our conceptual framework.
9 These indicators and categories are discussed at literature review part of the study.

II.3. THE LINKAGE BETWEEN DEVELOPMENT AND MIGRATION

II.3.1. What is development?

Although most of the migration theories focus on economic determinants of migration, we knew that there was a complex relationship between social issues and migration. In this regard, we considered that emphasizing and explaining migration decision with a development perspective was more appropriate than a monetary-based approach. Skeldon (1997) explained the complex relationship between development and migration as follows:

> *"....is being written about migration and development implies that there is some kind of relationship between them. ...., the relationship is exceedingly complex and few simple, or indeed casual, linkages can be established...... We all intuitively know what "development" and "migration" mean but, when we come to identify and delimit their substance precisely, they prove elusive indeed. Both are dynamic terms that imply change: development suggests a growth, an evolution, an advancement; migration suggests a shift in place of residence from one area to another"* (Skeldon, 1997, p. 1).

It was obvious that there was a blurred perspective on definition of development studies and economic development. Our literature review showed that the term of development economics (or economic development) was commonly used instead of development studies. When we established the linkage between development and migration, we mean the relationship between development economics and migration. The distinction was important because development studies covered many sides of social life and it includes economic growth, fair income distribution, gender issues, migration, urbanization and etc.; on the other hand, development economics was a part of development studies like migration and we establish the linkage between migration and development economics. Bottom-line, it appeared that development

studies cover the related scientific disciplines including migration and economics as an interdisciplinary field. Therefore all the positive and social sciences of development economics and migration patterns were automatically positioned under development studies. In our study, we focused on the linkage between development economics and migration. During this part of the study, definition of development theories by whom and how, evolution of the definition, classification of the development studies, the relationship between development and the population were briefly explained and the relationship between migration theories and development economics was narrated and discussed.

Development is blatantly defined as a process, which aimed to transformation of a country to a developed one by improving economic and non-economic variables. (Mıhçı, 1996). The concept of development studies is considered and explained by many school of thoughts and it is mainly dominated by orthodox economics. Although, development economics is a part of orthodox economics, Todaro and Smith (2006) asserted that it has a greater extent than traditional neo-classical economics and they explained development economics as follows:

> *".... development economics, to a greater extent than traditional neoclassical economics or even political economy, must be concerned with the economic, cultural, and political requirements for effecting rapid structural and institutional transformations of entire societies in a manner that will most efficiently bring the fruits of economic progress to the broadest segments of their populations. It must focus on the mechanisms that keep families, regions and entire nations in poverty traps and on the most effective strategies for breaking out of these traps* (Todaro & Smith, 2006, p. 9)*."*

Development economics were evolved and changed until it has finally defined by a trigger of change in institutional structures by a pluralist perspective (Mıhçı, 1996). Some schools of thoughts have considered the phenomenon of development in different

perspective as well. Since we believe that this phenomenon lies under the discipline of orthodox economics; we have focused on changes in the traditional definitions. In that context, we have classified how the perception of this phenomenon evolved over time by Mıhçı's (1996) study of analysis under six main dimensions [10].

- Development in the meaning of Westernization, Industrialization and Modernization
- Development in the meaning of economic growth
- Development in the meaning of structural change
- Fast economic growth and slow social change: Income Distribution and Issues of Poverty
- Development in the meaning of Human Development
- Sustainable Development

Because of the conditions of the post 2nd World War political economy, definition of the development has become even more central and visible in International Organizations. Therefore, in today's world the phenomenon of development has been under attention (Başkaya, 2005; Mıhçı, 1996). Even though this phenomenon has been used for almost sixty years, we have observed that until the 1950s; development has evolved and defined around the concepts of progression, industrialization, modernization or westernization. During this period, we can assume that the economical dimension of the development has been explained through industrialization or progression, sociological dimension of the development through modernization and its political dimension through westernization. By any means whatsoever until the 1950s, development was evolved as an idea of setting the example of Western societal experience to the rest of the world in order to let non-western countries experience the Western development. Başkaya has explained development in his work as:

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[10] During the study, the focus will be on the first five due to difficulties in measuring sustainable development.

"The phenomenon of development has become prevalent after the 2nd World War… Even though the concept was relatively "new", it's the form of the theory of modernization and ethnocentric development ideology under new circumstances. It emerged from a linear progression and endless growth paradigms of Western Ideology and Western school of bourgeoisie thought (Başkaya, 2005, p. 17)*."*

Until the 1950's, development was explained via economic progression by John Stuart Mill (1868), material progression by Adam Smith (1861) and a symbol of modernization through industrialization by Rostow (1971) (Mıhçı, 1996).

After the 2nd World War, because of the economic and political reasons, International Organizations had established and the usage of Development term had become widespread. The central motives of those two reasons were the polarization of the World Politics, the pursuit of expanding Western area of Interest and the incompetency of orthodox economics. Development has started to be explained through economic growth rather than Westernization or progression of modernization by many countries, which destined to become 'developed'. During this period, development was on the rise. However, the issue of underdevelopment was explained merely through economic growth.

Just like Todaro and Smith (2006) has pointed out that development economics was differentiating itself from the conventional economic theory and it's based on the works of the development economics pioneers. Development economists (R.W. Rostow, H.W. Singer, P. Rosenstein-Rodan, R. Nurkse, G. Myrdal, W.A. Lewis, etc..) emphasized that development could be pursued through economic growth, and underlined the importance of savings ratios and investments in terms of economic growth. They even stressed the fact that when domestic savings are insufficient, external helps can supply the deficiency. In addition, they sincerely asserted the way to economic growth can be sustained through industrialization, a planned one and suggested

indicative planning for that matter. They differentiate themselves from neo classic (traditional) economists by replacing free market with indicative planning and bring out import substitution for industrialization over capital outflow (Mıhçı, 1996).

During the post-World War period, development arguments were optimistically formulated and the issue of under-development was thought to be solved via the convergence, which has derived from positive economic indicators of underdeveloped countries. This optimistic perspective has continued till the oil crises. The problem of under-development was believed to be solved through financial indicators. As a result new development strategy was presented which involves growth perspective and structural transformation.

Structural Transformation connotes the structural changes in production and employment of the developing and underdeveloped countries. Transformation in the areas where the efficiency is much higher, will maintain the growth and eventually the development. In the process of the growth, agricultural sector will lose its significance compared to service sector and manpower will shift from agricultural sector to industrial sector and eventually to the service sector (Mıhçı,1996). Clark Colin (1940) suggested that the shifts would lean towards efficient production and employment. Meanwhile in Prebisch's work, we can observe that efficiency and dualism in economy is the frontline. Başkaya (2005) summarizes the foundations of the structuralist arguments as:

> *"A country which imports technology and unable to produce capital goods is impossible to have internal integrity and coherence. On the other hand, dual economic structure has appeared because of the coexistence of the both sectors or modern technology and conventional technology. That's why there are two different sectors in terms of efficiency. The existence of a conventional sector creates a manpower surplus and this surplus pressures on the modern sector workers, hence blocks their wage increase…*(Başkaya, 2005, p. 68)*"*

Historically, development, which was explained through Westernization and modernization, has started to be explained through economic based achievements (economic growth, area transformation etc.) over time. It is believed by time, development, which based on economic indicators and targets was unable to offer a comprehensive solution to the problem of under-development. The belief of economic growth's capability to solve the social life problems (income distribution, unemployment, poverty, social marginalization etc.) was disappeared over time. That's why at the 1980s, a paradigm shift occurred regarding the phenomenon of development. Because of this shift, a pluralist perspective was born.

At that very moment, Amartya Sen's capability approach explained development as a transformative process to alter the human capabilities into achievements. That's why occurrence of disengagement instead of convergence, on the level of development, and human - society requirement based works; transformed the economic centered perspective of development into human centered and based on the quality of human life perspective. In his study Karaçay (2008), discusses whether Amartya Sen's capability approach causes a paradigm shift or not as:

> *"Actually, Sen struggles to find a realistic tool for solution, instead of using quality of life as an indicator of "real wage" or "utility"… At 1980s, in his works, he was destined to demonstrate that development can't be evaluated only via quantitative indicators and he asserted that in order to evaluate the development, the focus should be on the capabilities of individuals. According to Sen, in order to explain the individual capabilities and processes of development, normative assessments such as equality, happiness, poverty, democracy, political participation should be taken into consideration…His perspective views economic development in terms of improvement of individual capabilities; and differentiate itself from standard utilitarian perspectives such as individual utility, absolute or relative prosperity based standard utilitarian perspectives. Nevertheless, this perspective approaches to some main*

arguments of the traditional economics quite critically and whether it manages to distance itself from liberal tradition at the end or not (Karaçay, 2008, pp. 2–3) *."*

Notwithstanding Sen's work won't be considered as an utter distinct taught from orthodox economics, it critically influenced International Organizations' idea of development and many development related issues and politics.

This vague change in the definition and consideration of development during the 1980s has completely changed the paradigm shift together with reports of human development of the 1990s and Millennium Development Goals of the 2000s. In today's world, development denotes human development by the World Bank and it has become multi-faced:

> *"...human development, measured by life expectancy, adult literacy, access to all three levels of education, as well as people's average income which is a necessary condition of their freedom of choice. In a broader sense the notion of human development incorporates all aspects of individuals' well-being, from their health status to their economic and political freedom"*

II.3.2. An Overview of Development Theories

As indicated previously, the definition of development has shifted from a Western point of view to a multi-dimensional and human-centred one based on a liberal point of view. However, many schools of thoughts and different perspectives have been used to explore development over time and these will be beneficial when exploring the relationship between development and migration theories.

Todaro and Smith (2006) categorised theories of development into four main dimensions: (i) linear stage theories, (ii) structural-change theories, (iii) international dependence revolution and (iv) the neo-classical counterrevolution. This categorisation was framed historically. During the 1950s and 1960s, the phenomenon of development

was replaced with the concepts of Westernisation and Modernisation, and development evolved as an idea of Western societal experience serving as an example for the rest of the world. During those years, the background of the suggested theories and policies for development was shaped accordingly. The major thought in those years was that development was a process of serial successive stages of economic growth. It was believed that development was achieved by following the economic growth path of developed countries. A linear development path was used in Rostow's Stages of Growth Model and the Harrod-Domar Growth Model (Todaro & Smith, 2006). The hegemony of a linear economic growth model for development endured since the 1970s. Development perspectives of two conflicting schools formed the theories and policies of development in the 1980s. One of the perspectives was based on the structural-change that emerged in the transformation of underdeveloped countries from traditional agricultural societies to urbanised, modern and industrialised societies (Todaro & Smith, 2006). Structural-change theoreticians were not considered social scientists who had a distinct perspective from conversional development theoreticians. According to Todaro and Smith (2006), the structural-change approach used the tools of neo-classical price and resource allocation theory and Lewis' two-sector surplus labour approach was the theoretical background of their development perspective that focused on structural transformation.

The other development perspective of the 1970s was based on dependency school's approaches. Theorists living in developing countries emphasised that underdevelopment was the result of the historically unequal colonial relationship between developed and underdeveloped countries. Developed and underdeveloped countries were named 'centre' and 'periphery' countries and this perspective is considered an indirect outgrowth of Marxist thought (Todaro & Smith, 2006). The international dependency theorists emphasised neo-colonial dependency, false-paradigm

and dualism[11]. Not only is dualism very essential for development theories, but its effect has also been emphasised in migration theories.

The work of Başkaya (2005) is representative of Turkish school of dependency taught. In his work, Başkaya (2005) emphasised that development economics is directly used to indicate the passage from colonialism to the new colonialism process and points out the following:

> *"In Social Sciences, development economics is virtually a Western product. In this way, our problem of development represents the views of foreigners, especially the foreigners that have colonized us* (Başkaya, 2005, pp. 17–43).*"*

Although Todaro and Smith (2006) categorised development theories under four dimensions and named the dominant post-1980s development perspective neo-classical counterrevolution, we believe that there are two main hegemonic points of view characterising development. These two main points of views both coincide with each other in many areas; they are the neo-classical conventional perspective and neo-Marxism heterodox point of view. In our study, we examine the determinants of Turkish migration to European countries. Given the method used, we analyse the conventional relationship between migration and development.

II.3.3. The Linkage between Migration Theories and Development

The relationship between development and population issues is disputed. According to Furedi (1997), we can analyse the relationship between population and development in three periods: 1) the pessimistic period when population was commonly perceived as a problem for development; 2) the optimistic period when population was not perceived as a problem for development; and 3) the period when the relationship

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[11] Not only is dualism very essential for development theories, but also the effect of it has been emphasised in migration theories. The effect of dualism is discussed when explaining Piore's (1976) migration theory.

between population and development was not linear, the relationship was difficult to determine and the direction of causality is unclear. Just like the periods when the relationship between population and development was complicated, the relationship between development and migration have shared the same fate of complexity. De Haas (2010) explained the views on migration and development like a pendulum:

> "*.... shows how the scholarly and policy debates on migration and development have tended to swing back and forth like a pendulum from sheer optimism to sheer pessimism, and back again to optimistic views in recent years* (De Haas, 2010a, p. 230).*"*

Neo-classical economy and modernisation views are optimistic about migration and they assert that migration has a positive impact on the development level of the destination country. They consider that the decision to migrate to a developed country leads to a counter flow of remittance, knowledge and investment and these investments generate economic growth, development and modernisation. On the other hand, the migration pessimistic view believes that migration has a negative effect on developing countries and migration contributes to a vicious circle of underdevelopment in origin countries (De Haas, 2010a).

We consider that the link between migration and development has a complex structure. Similarly, Skeldon (1997) explained this complexity stating that migration is an integral part of the development process that causes changes in the economic, social and political structure and is affected by the changes in these structures. Thus, we believe that classifying migration as either optimistic or pessimistic is inadequate. In order to understand the complexity between migration and development, we have analysed the shifts that occurred in the orthodox development paradigm from an historical perspective instead of utilising the optimistic and pessimistic views and tried to explain these effects on the relationship between migration and development.

Table II. 2: Main Phases of Changes in Development and Migration Theories

Period	Development Perspective	Migration Theories
Until 1970	Linear Stage of Economic Growth	Two Sector Model (Lewis, 1954)
1970-1985	Structural Changes Perspective	Todaro Migration Model (1969-1970)
		Dual Labour Market Theory (Piore, 1979)
		New Economics of Labour Migration (Stark & Bloom, 1985)
>1985	Multidimensional, Non-Linear Development Perspective	The Hypothesis of Mobility Transition (Zelinsky, 1971)
		Migration and Development (Skeldon, 1997)
		Migration Hump (Martin & Taylor, 1996)
		Human Development Approach (De Haas, 2010)

Source: Author's own elaboration

We categorise the migration theories into three different periods according to the changes in the definition of development as indicated above. In the first period, Westernisation, Modernisation, and economic growth were considered together with the phenomenon of development; the orthodox point of view was dominant until the 1970s. In this period, migration theories were mostly based on economic factors, including neo-classical economic arguments asserting a possible convergence between countries. One

of the most famous models, which demonstrates the relationship between migration and development, is Lewis' (1954) Two Sector Model. Migration theories continued changing along with the phenomenon of development. Transformations that occurred in the development paradigm triggered a change in development related migration theories[12] as well. Migration theories that are positioned in our categorisation according to similarities and differences are examined below.

Lewis' (1954) structural transformation model explains shifting economic activity and labour force from traditional rural agriculture to modern urban industry. This transformation leads to rural-urban migration. The model was modified by Ranis and Fei (1961), and these two versions are based on neo-classical macro-economic theory (De Haas, 2010a; Massey et al., 1993). The models were accepted as part of the general theory of development in developing countries, which had surplus labour. In the model, developing countries have two sectors: rural overpopulated subsistence sector and modern urban industrial sector (Todaro & Smith, 2006). Migration is based on labour migration from rural areas to urban areas. The labour transfer between sectors generates output expansion, capital accumulation and industrial investment (Todaro & Smith, 2006). The expectations of the model such as output expansion and capital accumulation were parallel to development perspective in those years. Lewis' model is an important part of the development process (De Haas, 2010). According to assertions of the model, labour migration from rural to urban areas leads to development in society.

Between 1970-1985, development was criticised because of the lack of expected convergence and lack of economic recovery unlike the social indicators. During those years, the orthodox point of view revised the development theories and heterodox point of view started to perceive development as a problematic area. Migration theories and development theories were changed correspondingly. Three prominent theories are included in the table which introduced structural transformations

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[12] We preferred to focus on development related migration theories instead of all migration theories in our table.

in the period from 1970 to 1985. Even though all three theories dealt with structural transformation, each one emphasised different structural differences from a different perspective.

Todaro's Migration Model (1969-1970) adopted the structural differences in neo-classic discipline (Massey et al., 1993) and in his study 'Dual Labor Market Theory', he utilised the neo-classical point of view to develop hypotheses. He ended up with very different results and inferences without reaching to any oppositeness. 'Dual Labor Market Theory' provides structural differences as the reasons for migration. On the other hand, 'New Economics of Labor Migration Theory' pays attention to unfair income distribution, poverty and relative poverty, which affected development theories until the end of the 1970s, and shook the foundations of the assumptions and inferences of the neo-classical migration theory.

Todaro's Migration Model (1969-1970) basically depends on the neo-classical micro theory. The model is based on studies by Todaro (1969) and Harris and Todaro (1970). The model has similar assumptions to the neo-classical micro theory. According to the model, migration is based on economic motivation factors. Migrants are rational individuals because they decide to migrate as a result of a cost-benefit analysis of their situations. The model explains two sectors of labour migration: rural and urban. Although Todaro (1969) elaborated the model for internal migration, the rationale behind the model is suitable for international migration with some modifications (De Haas, 2010a; Massey et al., 1993). The basic characteristics of the model are summarised as follows (Todaro & Smith, 2006):

- Migration is decided by rational economic circumstances of relative benefits and costs. The comparison of costs and benefits is mostly based on financial possibilities, but is sometimes related to psychological considerations.

- The decision to migrate is not related to actual real-wage differentials, but rather based on two factors: (i) expected real wage differentials between two areas and (ii) the probability of obtaining employment in the destination. Obtaining a job is directly related to urban employment rate and inversely related to urban unemployment rate.

This theory suggests that the decision to migrate will result in a transformation of labour markets and social structure. Thus, migration will cause societies to transform. Studies by Todaro (1969) and Harris and Todaro (1970) viewed the relationship between migration and development in a relatively optimistic manner.

Another prominent migration theory from this period was the Dual Labour Market Theory which was advocated by Piore (1979). According to Piore, economic structure in developed countries depends on endogenous and permanent labour demand and international migration is caused by demand. He asserted that immigration is not the result of push factors in origin countries; it is the result of pull factors in destination countries. In his opinion, low wages or high unemployment in origin countries are not motivations to migrate abroad; a chronic demand for workers in advanced industrial economies in destination countries are the reasons behind the decision to migrate (Massey et al., 1993). Economic dualism in industrialised societies is the main determinant of immigrant labour demand. There are two kinds of labour sectors in these societies: (i) capital-intensive primary sector and (ii) labour-intensive secondary sector. Because of the segmentation in the labour market, workers in the primary sectors are expensive and are considered as capital. Workers in the labour-intensive secondary sector have low wages and unstable working conditions. It is difficult to attract native workers into the secondary labour-intensive sector. The international migration between developed and developing countries is based on filling the secondary sector labour demand in developed, industrialised countries. Thus, migration in this theory is the result of development (or underdevelopment) conditions of countries. This theory is different from the neo-classical migration view; Massey et al. (1993) explained the difference:

> *"Dual labor market theory neither posits nor denies that actors make rational, self-interested decisions, as predicted by microeconomic models……. Although not in inherent conflict with neoclassical economics, dual labor market theory does carry implications and corollaries that are quite different from those emanating from micro-level decision models* (Massey et al., 1993, pp. 443–444).*"*

Late in the 1970s, the criticism against neo-classical migration theories increased. The new economics of labour migration theory is considered a critical response to neo-classical migration theories. It is explained as follows:

> *"The new economics of labor migration theory rejects neo-classical models, which were evaluated as too individualistic and rigid to deal with the complex and diverse realities of migration and development interactions* (De Haas, 2008, p. 34).*"*

According to Stark and Bloom, (1985), expected income maximisation is not the only reason for the decision to migrate; risk minimisation is the actual reason. The decision unit of migration is families or households in developing countries. Individual decisions to migrate are not a realistic formation of migration modelling. In developing countries, households have possibilities to control risks by diversifying the allocation of household resources. Family labour is the main well-being resource for households. Households may decide to send some family members abroad in order to increase income, whereas the other family members work in the native labour market. There are structural differences between developed and developing countries. The economic conditions of developing countries are unsafe and unstable for workers. In an economic crisis, households can rely on remittances and use the remittances as a livelihood strategy because the institutional mechanism for managing risks is absent or inaccessible for poor households. In developed countries, insurance markets or governmental policies protect households and decrease risk for unpredictable economic conditions. In addition

to risk managing systems in developed countries, credit markets are well designed and relatively poor families in developed countries easily reach credit markets and support their investment. Credit markets are not well developed in developing countries and investment is very costly in developing countries compared to developed countries. The structural and institutional conditions of developing countries lead to emigration (Massey et al., 1993). Briefly, new economics of labour migration theory is related to diversification of the household's income portfolio, increasing household income and overcoming boundaries on investment in the origin country (De Haas, 2010).

The structural and economic conditions of developing countries are the reasons behind the decision to migrate among households. The theory emphasises the underdevelopment conditions of countries by explaining poor households' livelihood strategies, unsafe and unstable economic conditions and imperfect institutions for credit and insurance markets. These conditions are considered pull factors of international migration; thus regarding causality, development conditions lead to the decision to migrate.

From 1985 till now, pluralist, humanitarian and multi-faceted points of view have emerged in development and migration theories. De Haas related these changes in both concepts to paradigm shifts in social sciences and further explained:

"Most empirical work from the late 1980's and 1990's increasingly acknowledged the heterogeneous, non-deterministic nature of migration impacts on development. This corresponded with a general paradigm shift in contemporary social theory, away from grand theories towards more pluralist, hybrid approaches, which simultaneously take into account agency and structure. Social scientists, influenced by post-modernist thinking and Giddens' (1984) structuration theory, sought to harmonize agency and structure-oriented approaches. Recognizing the relevance of both structure and agency is

essential, as this enables us to better deal with the heterogeneity of migration-development interactions (De Haas, 2010a, p. 241).*"*

After 1985, three studies, as cited in the table, provide a multi-dimensional point of view regarding heterogeneity rather than unidirectional in the relationship between development and migration. Studies by Skeldon (1997), Martin and Taylor (1996) and De Haas (2010) and additionally Zelinsky's (1971) study called 'The Hypothesis of Mobility Transition' have explained the relationship between migration and development through a multi-dimensional, non-linear and dynamic point of view, beginning 20 years ago. Even though Zelinsky's (1971) study is not consistent with the timing above, the perspective of the hypothesis corresponds with post-1985 migration theories and development paradigm shifts.

Zelinsky (1971) formulated his hypothesis via the relationship between demographic transition theory and migration mobility and created a background for the theory based on a complex relationship between development and migration. While formulating this background, he used two important demographic hypothetical theses from the period. He explained his main framework as:

"In demography, we can discern only two such axiomatic items: the theory of the demographic transition and the so-called laws of migration. The first is the assertion that, on attaining certain thresholds of socioeconomic development, every community will pass from a premodern near-equilibrium, in which high levels of mortality tend to cancel out high levels of fertility, to a modern near-equilibrium, in which low fertility almost matches low mortality but with the decline in births lagging far enough behind the decline in deaths to ensure a substantial growth in numbers during the transitional phase. The laws of migration, first enunciated by Ravenstein in 1885, later modified by Thomas and Stouffer, and most recently improved and codified by Lee, are a set of loosely related general empirical statements describing migrational

relationships between sources and destinations (Zelinsky, 1971, pp. 219–220)*."*

He developed his mobility transition hypothesis based on these two axiomatic items. He used the concept of vital transition instead of demographic transition. According to Zelinsky (1971), as mentioned previously, demographic transition expresses socio-economic development phases. De Haas (2008) stated that Zelinsky (1971) used the concept of vital transition for development:

> *"He preferred to use the term vital transition, by means of which he broadened the concept of demographic transition by linking it to processes of modernization, economic growth, and increasing mobility. In many respects, this vital transition can be equated with what many others would call development* (De Haas, 2008, p. 12)*."*

He divided both the vital transition phases and the mobility transition phases into five time-place periods. When a particular vital transition phase occurs simultaneously, a phase of mobility transition occurs accordingly. Specifically, phase 2 and phase 3 correspond to phase b and phase c of the vital transition. These phases are fast transitions in international migration. In his study, phase b is called the early transitional society, which is shaped by a rapid decline in mortality and major growth in the size of the population and phase c is called the late transitional society which is shaped by a major decline in fertility and a significant but decelerating natural increase in population. In phase b, all forms of mobility will increase and in phase c emigration will decrease.

Although the hypotheses are based on a modernisation perspective, it differs from neo-classical migration assertions. Zelinsky (1971) used development and its phases explicitly and he modelled the interdependence between development and migration. According to the model, there is a complex and non-linear relationship between migration and development.

An explanation of the relationship between development and migration has shaken the foundations of the neo-classical explanations regarding the aforementioned relationship. As is known, the neo-classical approach asserts an inverse relationship between the level of development and migration. On the other hand, Zelinsky (1971) coincides with the neo-classical perspective on some level. Especially the modernism point of view of the study, the argument of its inclusive nature over all countries and assumption of under-developed countries path and its destiny to follow the same Western experience are intensely criticised. Zelinsky (1971) stated that socio-economic changes and demographic transition influence global migration patterns and there is a mutual dependent relationship between them. Similarly, Skeldon (1997) suggested a complex relationship between economic development, state structure and migration patterns and improved Zelinsky's (1971) study with an integrative perspective. According to Skeldon (1997), when the development level of the countries is high, global and local level integrated migration systems emerge. If the economic development level of the countries is low, migration mobility occurs and these countries are not included in migration systems. Skeldon (1997) categorised countries based on their development levels and suggested five categories for the migration system.

Skeldon (1997, p. 52-53) distinguished the following five 'development tiers': the first tier is old core countries and the second is the new core countries such as Western Europe, North America and Japan. The main characteristics of the tier are immigration and internal decentralisation. The third tier is the expanding core countries like Eastern China, South-Africa and Eastern Europe. In these countries, there is both immigration and emigration as well as internal centralisation. Urbanisation or rural-to-urban migration can be seen in this tier. The other tier is called the labour frontier and it includes Morocco, Egypt, Turkey, Mexico, the Philippines, Spain and Portugal. The tier is characterised by emigration and internal centralisation. The last tier is called the resource niche and it includes countries in sub-Saharan Africa, some parts of central Asia and Latin America. In these areas, weaker migration can be seen.

A more multi-dimensional, complex and non-linear point of view was introduced by Martin (1993) and Martin and Taylor's (1996) studies of 'migration hump' approach. According to this approach, during the first phases of the development process, an increase in the level of income increases the likelihood of migration. Having a certain level of income is necessary to cover migration expenses. Increased migration networks, relatively decreasing costs of migration and the risks that migration entails, will increase the number of migrants during the development process. But at the next levels of development, the number of emigrants will decrease and emigrant countries will turn into migrant receiving countries. In contrast to different points of view, which suggest an inverted relationship between migration and development, this approach asserts a J-curve or inverted U-curve relationship between economic development and migration. During the first phases of development, emigration will increase, but later on it will dwindle away.

According to De Haas (2008), these three models should be integrated into one single, spatio-temporal 'transitional' migration perspective. The perspective explains the complex, non-linear linkages between various forms of migration and development in terms of social, technological, economic and demographic transformation processes (De Haas, 2008). In this regard, he proposed a new perspective and developed an empirical analysis. He operationalised the development term in his study as increasing capabilities of people. He chose Amartya Sen's development perspective in order to explain development. De Haas asserted that:

> *" ..the fundamental idea is that socio-economic development tends to increase people's capabilities and aspirations to migrate. However, while the effect of development on capabilities to migrate is more or less linear, the effect on people's aspirations to migrate is is more likely to resemble a J or inverted U-curve as a consequence of decreasing levels of relative deprivation* (De Haas, 2008, p. 17)*."*

As a bottom-line, points of view about development, migration theories, and the relationship between development and migration have changed over time. These two subjects and their relationship have been studied by several schools, disciplines and policies. In our study, we examine the relationship between development and migration through a post-1980 neo-classical economic perspective with a human-based, dynamic and multi-dimensional point of view. We based our formulation upon the existence of a non-linear relationship between development and migration and constructed our model accordingly. On the other hand, we are aware of the limits which derive from the capabilities approach. These limits include current data and research restrictions when incorporating development into our model. Therefore, we have chosen to initiate our research from a multi-dimensional development level.

CHAPTER III: LITERATURE REVIEW

In this section, empirical studies in the literature are briefly reviewed under three sub-sections. In the first sub-section, we explain the factors depicted in Figure II.4 based on previous empirical studies. We start with the studies that investigate the effects of demographic factors on international migration because we think that demographic factors are initial factors that shape the social aspects of societies. We then discuss the relationship between economic factors and international migration. Later, social factors that we have divided into three subcategories (network, urbanisation and education level) are discussed. Lastly, we evaluate the effects of factors such as migration policy, distance, colonial relationship and historical heritages, which we call stimulating factors on international migration. In the second part of the chapter, econometric studies on development and international migration, which have been discussed in a few studies and which are relatively new, are reported. The last part provides an explanation of empirical international migration studies for Turkey.

III.1. STUDIES ON DETERMINANTS OF INTERNATIONAL MIGRATION

III.1.1. Studies on Relationship Between Demographic Factors and International Migration

Many international migration studies assert that demographic factors, such as the age structure of countries, have an impact on international migration and try to demonstrate this phenomenon empirically. The vast majority of studies assume that demographic factors have a direct influence on international migration. In this study, it is suggested that demographic factors have an indirect effect as well as a direct effect. It is claimed that especially demographic factors are an initial factor and have changed the social structure of many countries. De Haas proposed a similar point of view:

"Although demographic and migration processes are often strongly correlated, it is less clear why there would be a direct causal link. At best, the link between demographic change and migration is probabilistic and indirect. After all, people do not migrate "because of" population growth. This will only happen if population growth goes along with sluggish economic growth and high unemployment (De Haas, 2008, p. 10)*."*

Although it is emphasised in few studies that theoretically there is an indirect effect of the relationship between migration and demographic factors, the statistical and econometric analyses of the subject assume direct effects. In this study, relations and influences of the following four basic demographic structures were evaluated: population size, age structure, fertility levels and mortality.

Many studies that have provided a theoretical framework for international migration suggest that population size has an impact on migration (Ravenstein, 1885; Steward, 1941). In particular, they utilise the gravity models, population size of origin and destination country as determinants of international migration both mathematically and statistically. The basic hypothesis that derives from the gravity models of population size suggests that there is a linear relationship between international migration and population size of the two countries. In other words, countries with a large population will send more emigrants to the destination countries compared to countries with a smaller population, or an increase in the population size of the origin country will have an increasing effect on the international migration stock. Countries with a large population will attract more immigrants to their countries.

Studies exploring the impact of population size on international migration in various ways have shown that the increase in the number of origin countries has led to an increase in emigrant stock (Bucevska, 2010; Czaika et al., 2016; DeWaard, Kim, & Raymer, 2012; Fagiolo & Santoni, 2015; Kim & Cohen, 2010; Ramos & Suriñach, 2013). These studies examined various groups of immigrants based on various

theoretical frameworks. For example, DeWaard et al. (2012) focused on the migration systems within Europe and evaluated the key determinants of migration flow in Europe based on the estimates of migration system theory. He found a statistically significant relation between the population size and migration flow as well as many determinants in his work. He emphasised that population size in both origin and destination countries promote migration. Moreover, Czaika and Parsons (2016) researched high-skilled migration policies and incorporated the impact of population size into the analysis. Focusing on a particular group of Labour Migrant has shown that population size of the destination country has a positive influence on qualified labour migration.

Many studies exploring population size have shown that an increase in the size of the origin country population increases the international migration movement, whereas some studies found that an increase in population of the destination country reduces the immigrant stock (Bucevska, 2010; Czaika et al., 2016; DeWaard et al., 2012; Kim & Cohen, 2010; Ramos & Suriñach, 2013), there are other studies that demonstrate an increase in the population of destination country results in a decrease in the immigrant stock (Bucevska, 2010; Ramos & Suriñach, 2013).

Population density also provides information about population size. A study on labour emigrant flows in the Philippines focused on population density instead of population size. While an increase in population density in the Philippines was expected to have a positive effect on emigrant stock, the statistics showed that this effect was negative (Agbola & Acupan, 2010).

International migration has become more cyclical and become prominent for labour migration. For this reason, studies on the determinants of migration with economy-based indicators have become prominent. The structure of the workforce is also an important indicator of labour migration. Work is often used to explain the labour migration of countries' age structures because migration is strongly associated with a young population and the 18-30 age group is the most likely group to migrate (Clarke &

Eyal, 2013). Total dependency ratios, potential support ratios and the share of young population in total population are the main indicators that represent the age structures of countries when analysing the determinants of international migration. There are many studies which include age structures as determinants of international migration (M. Beine & Parsons, 2015; Bertocchi & Strozzi, 2008; Clarke & Eyal, 2013; DeWaard et al., 2012; Kim & Cohen, 2010; Mayda, 2010). The dependency ratio is expected to have a negative effect on emigrants in origin countries because a young age population has a higher propensity to migrate than the older age population. Moreover, a destination country with an old age population is expected to attract more immigrants. Although studies have utilised different indicators, they have arrived at similar results. Mayda (2010) used the share of 15-29 year old population in the origin country to analyse the effect of age structure. She found that a ten percent increase of the 15-29 year old population in the origin countries corresponded with a rise of 20 emigrants per 100,000 individuals. Similarly, Kim and Cohen (2010) analysed the effects of age structure on international migration using potential support ratio. The study showed that a young population in the host society corresponded with an 11% decline in immigrants and a young population in the source country corresponded with an 8.2% increase in emigrants.

Many structures of countries can be determinants of international migration. For example, a search for a better standard of living can cause people to migrate. Particularly the desire to have a better quality of life can cause people to leave their countries of origin. These indicators are included in a small number of studies, exploring whether life expectancy and infant mortality rate (which can be indicators of higher quality of life and used to explain human development levels) are demographic determinants of migration. The expectation is that a high infant mortality rate or low life expectancy at birth in an origin country increases the emigrant stock; on the other hand high infant mortality rate and low life expectation at birth in destination countries leads to a decline in immigrant stock (Kim & Cohen, 2010). The effect of mortality level on emigrant and immigrant stocks found counterintuitive in studies. Czaika et al. (2016)

used life expectancy in analysing high-skilled migrants' decision to migrate and they found an insignificant effect for their migrant categories. Kim and Cohen (2010) used infant mortality and found a counterintuitive result. The effect of infant mortality rate in destination country was positive and increased inflows while the effect of infant mortality rate in origin country was negative.

There are not many studies that incorporate the level of fertility, such as the level of mortality, into the analysis. The expectation regarding fertility level is as follows: emigrant stock will increase as the fertility level increases. However, results have shown the opposite whereby past term fertility level has a negative effect on the emigrant stock, while it has a positive effect on the immigrant stock (De Haas, 2010b).

III.1.2. Studies on Relationship Between Economic Factors and International Migration

As mentioned earlier, one of the basic motivations behind people's decision to move is the desire to have better living conditions or to believe in the possibility of creating such a life. Whatever the better living conditions are, the person in question is usually looking for ways to improve their monetary-based conditions, albeit changing from one situation to another. For this reason, labour migration has become a more frequent migration category among other migration categories over time. Therefore, there are a number of international migration theories and econometric analyses that incorporate economic explanations into international migration. Specifically, the direct effect of economic factors on international migration, unlike demographic factors, have facilitated the inclusion of these factors into the analysis and increased the number of studies.

When international migration theories are examined, economic factors are implicitly included both in pull-push factors and in more spatial models such as gravity

models. In addition to these models, Sjaasted (1962), Harris and Todaro (1972), Borjas (1980), Piorre (1979) and Stark and Bloom (1984) theorised that economic-based factors are the main international migration determinants. Each model incorporates economic factors from different perspectives into their analysis.

When econometric analyses are evaluated, per capita income is the most important international migration determinant. The hypothesis explaining the relationship between per capita national income and the international migration movement is based on the assumption that people have a motivation to search for better economic conditions such that:

- The stock (flow) of immigrants in a destination country is positively related to GDP per capita in destination country.

- The stock (flow) of emigrants in an origin country is negatively related to GDP per capita in destination country.

- The differences between destination country and origin country have a positive effect on immigrant stocks.

There are a number of studies that have investigated these hypotheses using various methods, and the results have generally supported these hypotheses. In short, studies have shown that increasing the per capita income of the origin country will reduce the international migrant stock (flow) and the increase in the per capita income of the destination country will increase the international migrant stock (flow) (Brücker & Schröder, 2012; Bucevska, 2010; Clarke & Eyal, 2013; Fagiolo & Santoni, 2015; Feridun, 2007; Mayda, 2010; Moral-Pajares & Jiménez-Jiménez, 2014; Ramos & Suriñach, 2013; Ruyssen, Everaert, & Rayp, 2012; Ruyssen & Rayp, 2014).

Even if the studies used different econometric analysis, they found similar results. For example, Feridun (2007) used the Granger causality test in order to

investigate the causality between immigration and GDP per capita in Sweden. He found long-run bidirectional causality between immigration and GDP per capita in Sweden.

Almost all studies supported the association between international migration and GDP per capita, but a group of studies has questioned the linearity of the relationship between income and migration. They investigated non-linear and inverted U-shape associations (Adams Jr, 1993; Brücker & Schröder, 2012; De Haas, 2010b). As a result, they asserted an increasing strong non-linear relationship between income and international migration.

In addition to GDP per capita, unemployment rates, employment rate, wage ratios in origin and destination countries, inflation and unfair income distribution have also been analysed as determinants of international migrations in empirical studies. The main expectation about increasing unemployment rate in an origin country is an increase in emigrant stock. The positive relationship between emigrant stock and unemployment rate and the positive relationship between employment and immigrants have been considered in studies (Agbola & Acupan, 2010; Bertocchi & Strozzi, 2008; Bucevska, 2010; Feridun, 2007; Jajri & Ismail, 2014; Ruyssen et al., 2012). Furthermore, wage ratio has a positive effect on immigrant stock. The association between wage ratio (or wage gap between destination and origin countries) and immigrants was significant and positive (M. Beine & Parsons, 2015; Bertocchi & Strozzi, 2008). Beine and Parsons (2015) asserted that an increase of 0.3 in the wage ratio raises migration rates by 3%. On the other hand, higher native wages in destination countries deterred immigration (Ruyssen et al., 2012).

Furthermore, inequality has been investigated to explain the effects of unfair distribution on the decision to leave one's country. Mayda (2010) found that an increase in the level of inequality in a source country had a non-monotonic effect on emigration rate. Another study investigated the effects of the Gini coefficient in the Philippines on Filippo emigrants, finding an insignificant association (Agbola & Acupan, 2010).

The recent economic theories of international migration have focused on explaining the determinants of international migration with a utility function. In this regard, they notice the factors which increase costs of migration in their studies. Inflation is one factor that has been investigated to explain the cost of a decision to migrate. Agbola and Acupan (2010) analysed the effect of inflation on Filippo's emigration finding an insignificant negative effect on emigration.

III.1.3. Studies on Relationship Between Social Factors and International Migration

As seen in Figure II.4, the basic indicators of social life in countries interact with economic and demographic structures of countries. Social factors in society are expected to have a direct effect on international migration. After an investigation on international migration theories and the determinants of international migration, urbanisation, literacy and social networks have become prominent determinants of international migration. We classify these indicators under the title 'social factors'.

Although urbanisation is considered one of the social indicators of international migration, most economic theories emphasise the association between urbanisation and migration (Harris & Todaro, 1970; Lewis, 1940). In the previous section of the thesis, the theories that explain the role of urbanisation on international migration were discussed within a development perspective. A common consideration about the association is the transformation of economic structure from agriculture to industry leading to attraction of labour into cities. The early stage of urbanisation is related to industrialisation. The transition from the traditional sector to modern industrialised sector leads to migration of rural workers to urban centres in the country. In the next stage, wages of urban workers show a downward trend and it pushes workers to migrate abroad (Maurel & Tuccio, 2016). Regarding urbanisation, the share of the urban population in destination countries and origin countries should increase emigrant and immigrant stocks and flows. The association is significant and positive in past studies

(DeWaard et al., 2012; Kim & Cohen, 2010). Industrialisation also has an effect on immigration; one study showed that industrialisation and urbanisation in China has attracted people from peripheries to core areas (He, Chen, Mao, & Zhou, 2016).

The effects of education on the international decision to migrate is expected to be similar to the effects of urbanisation on emigration and immigration. Studies have shown that an increasing destination country's education level attracts more immigrants. As the destination country's education level increases, an increase in the origin country's education level has a positive effect on emigrant stock because better educated people are more likely to migrate than less educated people. Furthermore, more educated people have a propensity to adapt easily to a new environment. More educated people are highly-skilled and access information, labour market, resources and opportunities in the destination country more easily than less-educated people. Accessing the labour market and resources facilitate adaptation and thus decrease costs of migration (Greenwood & Dowell, 1992). Education and costs of migration have become important for international migration since Sjaasted (1962) introduced human capital phenomenon in international migration theories. Sjaasted's human capital investment model of migration is explained as follows:

> *"Sjaastad argued that a prospective migrant calculates the value of the opportunity available in the market at each alternative destination relative to the value of the opportunity available in the market at the point of origin, subtracts away the costs of moving (assumed to be proportional to migration distance), and chooses the destination which maximizes the present value of life time earnings* (Borjas, 1994, pp:32)*."*

Researchers who incorporate countries' educational levels into their analysis as migration determinants often justify and explain their results using the above human capital model. Greenwood and Dowell (1992) discussed the results of two studies in the United States in a study of international macroeconomic determinants of migration. One

of these studies emphasised that increasing total enrolment in the origin countries' universities leads to increasing immigration rates of professional groups in the U.S. The other study focused on emigrant men who migrated to the U.S. between 1975-1980 and these emigrant men came from countries which have high literacy rates (Greenwood & Dowell, 1992).

However, one study did not support the hypothesis about the association between education level and international migration. A micro level analysis of economic and demographic determinants of international migration in rural Egypt showed that *'education may not necessarily be positively related with migration'* (Adams Jr, 1993, p. 162). Another counterintuitive result was a statistically negative relationship between adult literacy and Filipino's emigration. According to the study, an increase in adult literacy decreases the decision to migrate. It is surprising because this is contrary to the expectations of the human capital investment migration model. The counterintuitive result is justified by explaining the relatively unskilled workers' emigration pattern in the Philippines. The positions in destination countries may not be attractive for high-educated Filipino workers (Agbola & Acupan, 2010).

In Figure II.4, one of the important factors that impacts international migration is a social network. A social migration network is defined as *'a composite of interpersonal relations in which migrants interact with their family or friends. Social networks provide a foundation for the dissemination of information as well as for patronage or assistance'* (Haug, 2008, p. 588). First explained in detail by Taylor (1986), social network is a pull factor which identifies networks between past migrants and potential migrants sharing kinship, friendship or origin (Bijak, 2006). Social network has three important aspects. First of all, acquiring social ties between past migrants and potential migrants decreases costs and risk. In addition, this kind of channel facilitates the decision to migrate. It decreases costs because families or friends in destination countries provide information about the destination country's living condition and job market. Searching for a job is not as costly as in the past. In some

circumstances, previous migrants provide shelter and food. Migration networks also facilitate adaptation to a new destination country given the common language and customs (Greenwood & Dowell, 1992). Haug (2008) developed hypotheses about social network and potential immigrants under five titles. We emphasise three of them here. One of the hypothesis is identified as an information hypothesis. Natives in an origin country have a propensity to migrate to destinations where families and friends are living. These destinations are more attractive than other destinations because the information about living conditions or job markets is acquired easily from their networks. The effect of the information attracts potential migrants and social networks (or information channels) are pull factors of a destination and have a positive effect on immigration. The other hypothesis is a facilitating hypothesis that explains the effects of channel on encouragement of new migrants to adapt to the destination country. As a result of the facilitating effect, a social network in the destination is considered as a pull factor. The last hypothesis that we focus on is an encouraging hypothesis. It is related to encouragement of family members by families to migrate to the destination where past migrants are already living. The encouragement effect is considered a family income strategy. Social networks have a push factor effect on the decision to migrate (Haug, 2008). All these hypotheses assert that social migration networks have an increasing effect on emigration or immigration.

The effect of social networks is not a new phenomenon investigated in migration studies. In the 1970s, past migrant effect was discussed in order to explain international migration. The studies provided empirical evidence on the effect of past migrants on the decision to migrate. One of the explanatory determinants from Denmark, Germany, UK, Sweden, Italy, France and Russia to USA migration during 1870-1913 was explained as the effect of a social network (Greenwood & Dowell, 1992). In addition to the limited number of empirical studies in the 1970s, there is a theoretical discussion on the effect of social networks among the studies. Massey (1988) explained the economic development and its structural mechanisms, which are the network effect, structural transformation and income redistribution. In the study, social

network was identified as self-reinforcing and cumulative (Greenwood & Dowell, 1992). Bijak (2006) explained the self-reinforcing characteristics of social networks: *'Population flows are thus characterised by a large degree of inertia: once started, they are difficult to control by the authorities of the receiving country, and become more and more independent from the factors that originally caused them'* (Bijak, 2006, p. 7).

In recent years there is an increasing propensity to investigate the effect of social networks in migration studies. The studies provide evidence for the positive effect of social network in destination on migration stocks or flows (M. Beine & Parsons, 2015; M. Beine, Noël, & Ragot, 2014; M. Beine & Salomone, 2013; Clarke & Eyal, 2013; Czaika & Parsons, 2015; Fagiolo & Santoni, 2015; Gross & Schmitt, 2012; Mayda, 2010; Ruyssen et al., 2012; Ruyssen & Rayp, 2014). All of the studies focused on different aspects of international migration in several regions of the world. As noted before, Clarke and Eyal (2013) investigated the micro-economic determinants of migration and they used the National Income Dynamics Study as a data source. The data source provides micro level information and they considered that previous migration is strongly predictive of future decisions to migrate in South Africa. A similar result was found for different regions of the world in another study. Exploring the determinants of density of migrants in EU-15 countries between 2000 and 2010, the study found immigrants are likely to migrate to destination countries where they have immigration networks (Moral-Pajares & Jiménez-Jiménez, 2014).

Another study focused on international students' decision to migrate and found that a network significantly affected the students' decision to migrate. New student migration increased with the level of education of the network in the destination country (M. Beine et al., 2014). In another study, long-term climatic changes were investigated for international migration showing that a 10% increase in the diaspora will attract 4% more new migrants (M. Beine & Parsons, 2015). Another group of studies focused on the differences of social network effects between high skilled and non-skilled worker groups. Czaika and Parsons (2015) emphasised that a social network positively affects

high-skilled workers, but the effect increased for non-skilled workers. On the other hand, Gross and Schmitt (2012) found that cultural networks were significantly positive for non-skilled or low-skilled workers, but not significant for high-skilled workers. They explained that high-skilled workers have a propensity to adapt to the new conditions or may not require a culturally similar community around them. M. Beine and Salomone (2013) examined the network effects on different types of migrants. They found that network has heterogeneous effects on high-skilled or non-skilled migrant groups. In addition to skill level, they found that sensitivity to network was similar between males and females, but varied by education level.

III.1.4. Studies on Stimulating Factors of International Migration

In In Figure II.4, we assert that a group of factors stimulate migration rates. These factors do not share similar characteristics in order to be named under a heading. We consider that these are not the main determinants of international migration, but they have an effect on the acceleration of emigration rate or immigration rate. Thus, we identify the factors as stimulating factors. Distance, sharing a border, common language, common historical heritage and demanding migration policies are classified under this stimulating factor group.

Distance is commonly used in migration theories. The gravity model of migration or pull and push factor model have focused on the effect of distance between capital city of origin and capital city of destination on migration. In addition to these models, economic models of migration include distance implicitly in their analyses. The economic models identify distance with the direct cost of migration. Distance is used as a proxy indicator to measure the monetary and non-monetary costs of migration. Monetary cost is related to transportation and anticipated expenditures. Non-monetary cost is related to separation from families and origin country and it increases with distance. Furthermore, non-monetary costs are also related to acquiring information

about the destination. The possibility of acquiring information declines with increasing distance and leads to increased risks at the destination (Greenwood & Dowell, 1992).

There are several studies investigating the effect of distance on international migration. The basic hypothesis is decreasing distance between origin and destination country attracts more migrants. Greenwood and McDowell (1982) provided evidence for this hypothesis. They analysed emigrants from 23 countries and found that distance impacted the choice of emigrants as expected (Greenwood & Dowell, 1992). Moreover, Fagiolo and Santoni (2015) and Kim and Cohen (2010) found that sharing a border increases emigration rates and immigrant rates.

Ramos and Surinach (2013) investigated European neighbouring countries as a source of labour force and examined the migration between these countries and European Union (EU). They used a gravity model and found that immigrant stock decreases with distance. As noted before, Kim and Cohen (2010) analysed the demographic determinants of international migration flows. According to their study, greater distances between origin and destination countries decreased the number of potential migrants. They also emphasised that distance has a greater effect on immigrants than emigrants. In addition to these studies, there are studies that explain the association between international migration and distance, with results supporting the distance hypothesis (Fagiolo & Santoni, 2015; Mayda, 2010; Ruyssen & Rayp, 2014). Fagiolo and Santoni (2015) examined migration systems in Europe and they harmonised flow migration data. They showed that distance has less and less importance over time. On the other hand, they found that distance was important and significantly explanatory in the absence of a migration corridor or when the social network of a migrant was very small size.

Common language spoken or colonial past of countries influences immigration and emigration. It is generally associated with cost of migration. Common language spoken or colonial past of countries facilitates migrants' adaptation in the destination

and establishes migration channels or ties more easily than other destination countries. The studies support the expectations about the effects of common language and colonial past. Ramos and Surinach (2013) provided evidence that common language and colonial relationship increase the stock of immigrants. Fagiolo and Santoni (2015) found the same result for emigrants. Kim and Cohen (2010) explained that colonial link leads to an increased inflow by about 2.7 times and outflow by 5.5 times. When students' decision to migrate is examined, students have a propensity to migrate to the coloniser country (M. Beine et al., 2014). Czaika and Parsons (2015) found that common language has a positive effect on high-skilled workers, but it has a greater effect on non-high skilled workers.

In addition to the effects of distance and common language (or colonial linkages), migration polices have detractive or increasing effects on migration volume. Although there is increasing attention on the driving forces of international migration, little is known about the role of state and the role of migration policies. Regarding the globalisation of migration, it is believed that the volume of international migration has accelerated since the 1990s, though there are studies which assert there has not been a considerable change in the volume of migration. Thus, immigrants are becoming political propaganda for many countries. Due to both political approach and political economy in the country, various immigration policies for immigrants have been designed. According to changes in the conjuncture, countries sometimes apply strict migration policies and try to control immigration, while at times immigration policies are designed to increase immigration. Immigration policies vary depending on both the conditions of the countries and the time. Mayda and Patel (2004) reviewed the laws and coordination of migration arrangements for OECD countries and similarly, Ortega and Peri (2009) analysed immigration laws for 14 OECD destination countries and 74 origin countries for the period 1980-2005. The two studies showed that at the beginning of the 1990s, Austria, Germany, Luxembourg, Sweden and Canada loosened their entry laws, while Denmark and Japan narrowed their laws. The USA began to implement restrictive

immigration policies (Czaika & De Haas, 2013). These studies emphasise there is no general trend for migration policies.

Next, we focus on the empirical analyses of immigration policies in order to investigate their effects on immigration and emigration. Therefore, studies that question the effectiveness of migration policies, rather than theoretically discuss immigration policies, have been examined. On the other hand, although immigration policies are not studied theoretically, we feel the need to explain immigration policy. According to Czaika and De Haas (2013), international migration includes laws, regulations which governments in destination countries implement in order to influence the volume, origin and pattern of immigration flows. In addition to immigration policies, policies applied in other areas such as education, development and foreign policy can also have a diminishing or enhancing effect on the immigrant stock. Similarly, integration and citizenship policies are also influential on migrant stock (Czaika & De Haas, 2013).

The lack of studies examining the impact of immigration policies on immigrant stock is due to the fact that there are few indicators to operationalise these policies and the difficulty of including migration policies in analyses. It is not possible to talk about a comparable immigration policy indicator, so it is difficult to measure immigration policies. Often dummy variables that represent these policies are used in studies involving immigration policies as determinants. Sometimes there are studies that use policy dummy variables that are used for a migration type, and sometimes there are studies that use country-year dummy variables (Czaika & De Haas, 2013; Rayp, Ruyssen, & Standaert, 2014). Migration policy indexes are also used in some studies instead of dummy variables. Thielemann (2004) developed an index for the analysis of determinants of asylum applications in OECD countries for the years between 1985-1999. An alternative measure was developed by Bertocchi and Strozzi (2008) to analyse the determinants of immigration to 14 OECD countries in the 19th century. Another measurement was produced that focused on the integration policy of migrants in 25 EU Member States and three non-EU countries in 2007-2010. Despite these measurements

for migration policies, it is clear that there is no comprehensive and universal indicator for the polices because most of these indexes are considered estimates, not as measures and these indexes are subjective (Rayp et al., 2014).

For immigration policies, restrictive migration policies are expected to discourage immigration[13] while loosening migration polices are expected to stimulate immigration. In our global world, the main motivation behind migration policies is mostly controlling the volume of migration from poor origins to developed destinations because the developed destinations do not want to deal with low-skilled and culturally distinct poor people in their countries. As a result of this perception, restrictive immigration policies are considered as a requirement to control the volume of immigration (De Haas, 2011). According to the literature, there is no consensus on the effect of the restrictive migration policies. One group of social scientists argue that immigration policies have an effect on controlling immigration and the other group asserts that immigration restrictions cause a limited effect on migration (Czaika & De Haas, 2013).

Mayda (2010) asserted that if a destination country loosens its immigration policy, pull effects of destination will become more positive and push factors in the origin country will become more negative than implementing restrictive immigration regulations. Similarly, Ortega and Peri (2009) found that loosening immigration policies increases immigration stock. Another study investigated the emigration from Greece to USA between the years 1820-1980. They indicated that economic conditions in Greece forced citizens to migrate to the USA and they also asserted that political considerations were important in the volume of Greek emigrants. Immigration quota system of USA was developed in 1924 and it was a restrictive immigration policy; however, the act of 1965 was a loosening immigration policy. The effects of these regulations are seen in the

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[13] Migration policies can be classified as demanding migration policies and supplying migration policies. In the study, we investigate the effect of demanding migration policies, so we consider the immigration policies and their effects on migration in this part.

model. These policies were a critical factor that shaped Greek emigration to the USA during those years (Constantinou Stavros, 1985).

On the other hand, restrictive immigration policies lead to unintended effects on immigration. It will discourage return and encourage irregular migration. The restrictive policies do not have an effect on all migrants according to many scholars (De Haas, 2011). This consideration is especially valid for migrants who have various skill levels. Restrictive policies are effective policies for controlling the flows of low-skilled or intermediate skilled labours. Additionally, point-based migration systems are much more effective for high-skilled migrants (Czaika & Parsons, 2015).

Though there is a significant effect of immigration policies on immigration stock, we explain the factor as a stimulating factor. Specifically, immigration policies have a limited effect on long-term volume and trends. Czaika and de Haas (2013) explained the limited effect as follows:

> " *...once migration reaches a critical threshold level, migration networks, employers and the 'migration industry' (recruiters, lawyers, smugglers and other intermediaries) tend to facilitate the onward movement of people (Castles and Miller 2009; Krissman 2005; Massey 1990). Such 'internal dynamics' explain why migration can become partly self-perpetuating (de Haas 2010). Finally, states have limited legal and practical means to control immigration because they are bound to human rights such as the right of family life and the protection of asylum seekers, children and other vulnerable groups.*(Czaika & De Haas, 2013, p. 487)*"*

III.2. STUDIES ON THE LINKAGE BETWEEN INTERNATIONAL MIGRATION AND DEVELOPMENT

The relationship between international migration and development has become a more pluralistic and human-focused one during the last two decades. Although this

relationship is theoretically debated thoroughly, empirical work on this relationship is limited. In particular, there are very few studies involving development with a measurable indicator. Per capita national income is usually used as a proxy indicator of development in studies.

This study, incorporating the human development index into the analysis as a developmental indicator, and examining the relationship between international migration and development, considers that migration is a function of opportunity rather than income or wage differentials. This kind of consideration on migration function emphasises the effects of social, economic and political conditions on migration simultaneously. The most appropriate approach to the definition of this migration function is Amartya Sen's capability approach. Within this capability perspective, migration is an integral part of human development (De Haas, 2011). But an index that can be derived from the capability approach will be very comprehensive and dimensional. Even today's datasets do not have a comprehensive index that encompasses many aspects of the capability approach. For this reason, human development index is still the most basic indicator for development measurement. De Haas (2011) explained the basic hypothesis for the non-linear relationship between development and migration as follows:

"The effect of human development on migration capabilities is likely to be positive but not linear, and hypothesised to resemble an S-curve typical for diffusion processes. Assuming that a certain minimum ('threshold') level of social, human and/or material capital is needed in order to migrate, we can hypothesise that capabilities to migrate increase exponentially during early phases of development because relatively modest increases in development enable many more people to migrate. This migration- accelerating effect tends to be reinforced by the creation of social capital in the form of migrant networks, which tend to decrease the costs and risks of migration. Under higher levels of development most people will be already capable to migrate. When

such saturation occurs, the 'returns' of development on migration capacities diminish (De Haas, 2011, pp. 18-19).*"*

He used global migrant database of University of Sussex and analysed the effects of migration on immigrant, emigrant and total migrant stocks. He developed several models and some of them included GDP as an independent variable for development indicator and some of them included HDI as an independent variable for development. The results supported the hypothesis of a non-linear relationship between development and international migration finding a U-curve (or J-curve) association.

Economic and demographic determinants of international migration in rural areas of Egypt showed a non-linear relationship between development and migration. Income can be considered as a development indicator. When income of origin country is included into the model, the results significantly supported an inverted U-curve relationship between international migration and income (Adams Jr, 1993). Another study, as noted above, investigated the determinants of international migration and strongly supported a non-linear relationship between income and international migration (Clarke & Eyal, 2013).

III.3. STUDIES ON THE DETERMINANTS OF TURKISH MIGRATION TO EUROPEAN COUNTRIES

When examining migrations from Turkey to European countries, most of the econometric studies that are carried out constitute the main motivation of their analysis within the framework of Turkey's membership in the EU. These studies focused on the immigration movement between Turkey and Germany, both due to data constraints and the fact that the migrant population in Germany is much higher than in other destination countries. The tendency to migrate to Germany, which started with guest-worker agreements signed with Germany in the 1960s, continued into the 1970s, with the number of Turkish origins going from Turkey to Germany reaching 1.3 million with the

1980s-family reunification and refugee and asylum programmes. This figure accounts for 70% of Turkish-born people living in EU-15. Due to the Helsinki Summit, the membership of Turkey in the EU in the late 1990s and early 2000s started to come to the agenda more frequently (Akkoyunlu & Siliverstovs, 2006). For this reason, the issue of immigration from Turkey to the EU has been discussed more frequently and it has been empirically studied how much of the potential immigrant stock will be available if all the barriers are left.

One of these studies investigated the migration function of Turkish people into Germany. They used cointegration technique for the years between 1963-2004. According to the model, the relative income ratio between Germany and Turkey, the unemployment rates and the share of total trade between Germany and Turkey had significant effects on migration flows (Akkoyunlu & Siliverstovs, 2006). The study also emphasised the relationship between trade and migration which can be regarded as substitutes or complements. The study found that migration and trade are complements for Turkish migration to Germany. It supports the explanation of the Hechser-Ohlin model which assumes trade and migration are complements. An increase in the volume of trade between Germany and Turkey will increase labour mobility.

Another study on Turkish migration focused on the immigration scenarios to estimate future Turkish immigrants in EU if Turkey becomes a full member (Erzan, Kuzubaş, & Yildiz, 2006). The potential migrant stock for the period between 2004 to 2030 is forecasted in the study. They analysed immigrants in Germany because of Germany's migrant size and availability of time series data on migrants back to 1967. They investigated the effects of income level in origin country to capture the cost of migration, employment rates in destination and origin countries for probability of job opportunities, income differences between origin and destination and lagged migrant stocks to measure the magnitude of network. Additionally, they included labour-force agreements, military intervention and insurgency in the 1990s as dummy variables. The study showed that all these indicators are significant in explaining emigration from

Turkey to Germany. They emphasised that under strict policies, the annual net migration from Turkey to EU-15 countries will reach 35,000 migrants. Any conditions at lowering economic growth and increasing unemployment led to a higher number of potential migrants in EU-15 than free movement of Turkish people in the EU (Erzan et al., 2006). Even though the study is a very comprehensive study, the assumption about the representativeness of Germany for the whole EU-15 makes it problematic.

Another study assessing whether membership in the EU is as big as feared for migration was focused on assessing the potential immigrant stock of the EU candidate countries. In the study, in case of full membership, Turkey, Macedonia and Croatia focused on the question of whether it would create as great a migration pressure as feared (Bucevska, 2010). There has been a decline in the absolute number of immigrants from EU-candidate countries and the absolute number of migrants from Turkey has declined 50.62% between 1997 and 2007, though Turkey has been the third biggest immigrant group among immigrant groups in Germany. The study showed that the ratio of unemployment rate in origin country and destination country and social networks were the determinants of immigration to Germany. The study especially emphasised that a pause in EU-membership will lead to economic growth problems and higher unemployment rates in candidate countries. This will result in a higher number of potential migrants in Germany and EU-15 due to the strict immigration policies (Bucevska, 2010).

There are also studies on immigration determinants of Turkey. Especially after the World Bank established the Bilateral Migration Database, analyses for various destination countries have increased. One study used the gravity model to explore the determinants of migrating from Turkey to OECD countries from 1960 to 2010. They found that the determinants of migration from Turkey to the OECD countries were in line with the basic proposals of the gravity model. The main motivations for migrating to OECD countries were: the distance between Turkey and the destination OECD

countries, the GDP disparities, the population size of Turkey and the destination country, and the total migrant stock in the destination country (Dinçer & Muratoğlu, 2015).

In addition to these empirical analyses, a survey by EUROSTAT, which also provides micro-level information, found similar results. The study focused on the direct and indirect factors and mechanisms in immigration to EU. The study aimed to use a development policy tool by estimating the future potential migration. Five origin countries were assessed to produce information about the factors which influence immigration. A survey was designed and information about the Turkey-born migrants was collected in the Netherland by questionnaires. The report explained the effects of colonial ties and labour agreements between origin and destination countries. They found that the recruitment of Turkish and Moroccan labourers in the 1960s still has a strong influence on the continuation of immigration. This study was based on surveys at the micro level and it also provided information on the differences in the decision to migrate for males and females. Economic factors were dominant factors for men and family reasons predominated for women. Family-based motivations were dominant especially for Turkish migrants among other origin countries. The study also explored the effects of network. The colonial relationships or previous labour recruitment provided information and living conditions for the migrants. According to the research, male migrants were more informed than female migrants and network size of female migrants was small (European Commission. & Statistical Office of the European Communities, 2000).

The studies that model Turkey's determinants for emigration to Europe have been mentioned above. Studies have emphasised economic factors as well as social network effects, whether they were descriptive or used statistical analyses.

CHAPTER IV: EMIGRATION FROM TURKEY TO EUROPEAN COUNTRIES

In many international migration studies, international migration is commonly a natural result of globalisation. While Czaika and De Haas (2014) and De Haas (2005) emphasised that migration has accelerated due to low costs, strong communication nets of migrants and increased education, Castles and Miller explained this period as 'the age of migration' (Sert, 2012). Besides globalisation and international migration mobility, it is well known that international migration mobility has accelerated, deepened and widened in the 1990s, when more liberal policies were applied.

When international migrant stock and migration movements are examined, it is clearly seen that between the years 1990 and 2013, the number of migrants increased by more than 77 million and each year an average of 4.6 million migrants have been added to this number. The number of migrants added to migrant stock especially between 2010 and 2013 is higher than the number between 1990 and 2000. When the regions preferred by the migrants are examined, 69% of 77 million migrants preferred developed countries and 24 million migrants preferred developing countries. Europe and Asia host two-thirds of all immigrants (UN DESA, 2013).

While migration mobility has been accelerating, the question of how Turkey has been integrated into the international migration mobility is quite important for both Turkey and Europe. Even though Europe is the destination for immigrants, it has evolved from an origin country into a destination one. Through this transformation, a migration corridor has been formed between Turkey and Europe and Turkey has become an origin country that has been sending migrants to Europe for decades. The aim of this chapter is to evaluate international migration experienced by Turkey within a theoretical framework. The international migration experience of Turkey mostly depends on the Europe-Turkey migration system. In this chapter, instead of empirical modelling, descriptive statistics and various social, economic and demographical indicators will be used to evaluate international migration mobility of Turkey.

The objectives of this chapter are: (i) to explain the international migration corridor of Turkey during the very first years of the Republic of Turkey within the framework of migration theories, (ii) classify the migration experience of the country under various time periods, to determine the basic factors of these periods that resulted in migration, and (iii) to anticipate possible migration patterns for future periods.

The chapter includes two main sections: 'International Migration Experiences of Turkey' which examines international migration mobility of Turkey within the framework of migration theories, several indicators and variables followed by 'A Sample Model Proposal for Migration Pattern of Turkey' which explains the possible migration model and pattern.

IV.1. A REVIEW ON INTERNATIONAL MIGRATION OF TURKEY AFTER 1960

This section examines migration historically starting with the establishment of the Republic of Turkey. Turkey was integrated into world migration mobility in the 1960s. Since 1923, when the republic was established, until the mid-20th century, the only migration within the country was population exchanges between Turkey and Greece (İçduygu & Sert, 2009). In the 1960s, due to the economic, social and demographic structure of Turkey and the structural needs of developed countries of Europe, migration mobility, in today's terms, began. The main aspect that determined migration in the 1960s and 1970s was labour migration which started with the agreements between Turkey and Europe (Hancıoğlu, Ergöçmen, & Ünalan, 2004; İçduygu & Sert, 2009; Turkish Statistical Institute, 1995; Rıttersberger-Tılıç, Özen & Çelik,2012). In these years, Europe was in a restructuring process after World War II and the workforce demand increased. Just after the war, this demand was satisfied with the imported workforce from Southern Europe. However, in the 1960s, this demand was satisfied with the workforce from developing neighbour countries under labour treaties (İçduygu & Sert, 2009). In the 1970s, the Second Demographic Transition started and

European societies changed their demographic behaviour. Labour migration increased due to both prosperous and Fordism-based economical level and changing demographic structure. Those were the years that the unemployment rates rose and foreign currency flows through emigrant workers was seen as the only means of development in Turkey (İçduygu & Sert, 2009). In the 1980s, the economic motivation to migrate abroad was replaced with political reasons. The main reasons for migration from Turkey to Europe were family unification laws and political asylum demands due to the military coup. In addition, the reason for migration to oil-rich countries was the labour market.

In the 1990s, a continuation in the labour export was still valid but the direction changed towards post-Soviet countries. Accelerating migration mobility continued due to global integration with Europe. Turkey no longer sent people abroad but started to become a transit country. While the growth of the population born outside Turkey was 1.3 million at the beginning of 2000, in 2006 there were more than 187,000 foreigners in Turkey who had a residence permit. Today, Turkey has become a receiving country instead of a transit country (Hancıoğlu et al., 2004; İçduygu, Göker, Bertan, & Elitok, 2013; İçduygu & Karaçay, 2012; İçduygu & Sert, 2009).

Figure IV. 1: The Population of Turkey-Born People in Europe (1960-2010)
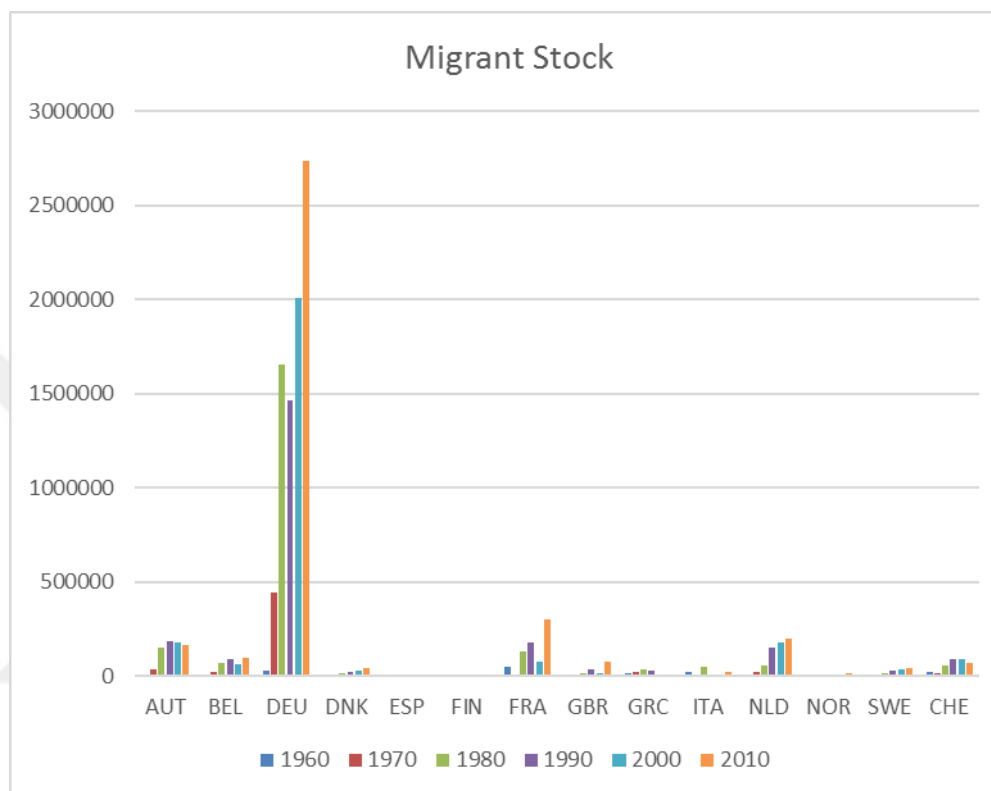
The figure above shows the numerical growth of Turkey-born residents of 14 European countries in 1960, 1970, 1980, 1990, 2000 and 2010. The number of residents born in Turkey was 140,815 in the 1960s and reached 3,743,909 in 2010. The reasons for this increase will be evaluated within international migration theories.

The determinants of the decision to migrate have been studied since Raverstein published his study of migration laws in the 19th century. The contemporary migration theories are developed by different branches of social science or disciplines due to its multi-dimensional and dynamic nature. More than twenty migration theories have been proposed since Raverstein's study. Although these theories are developed by different perspectives in social science, the complexity of migration leads to convergences at the same points of their classifications. Different classifications of the migration theories are developed as a result of the similarities and convergence between the theories in the literature. Briefly, Massey et al. (1993) explained migration theories by dividing them

into two categories: initiation of international migration and self-perpetuating international migration. De Haas (2008) classified them using a developmental perspective while Bijak (2006) classified them within a modelling perspective. Although migration theories are classified under different perspectives, there are basically sociological, economic, geographic and political migration theory classifications. Bijak (2006) developed the following diagram to explain the migration theories. Though this study is not focusing on migration theories, the following diagram is used to explain Turkish immigration in Europe with the following theories and classifications.

Figure IV. 2: Theories of Migration
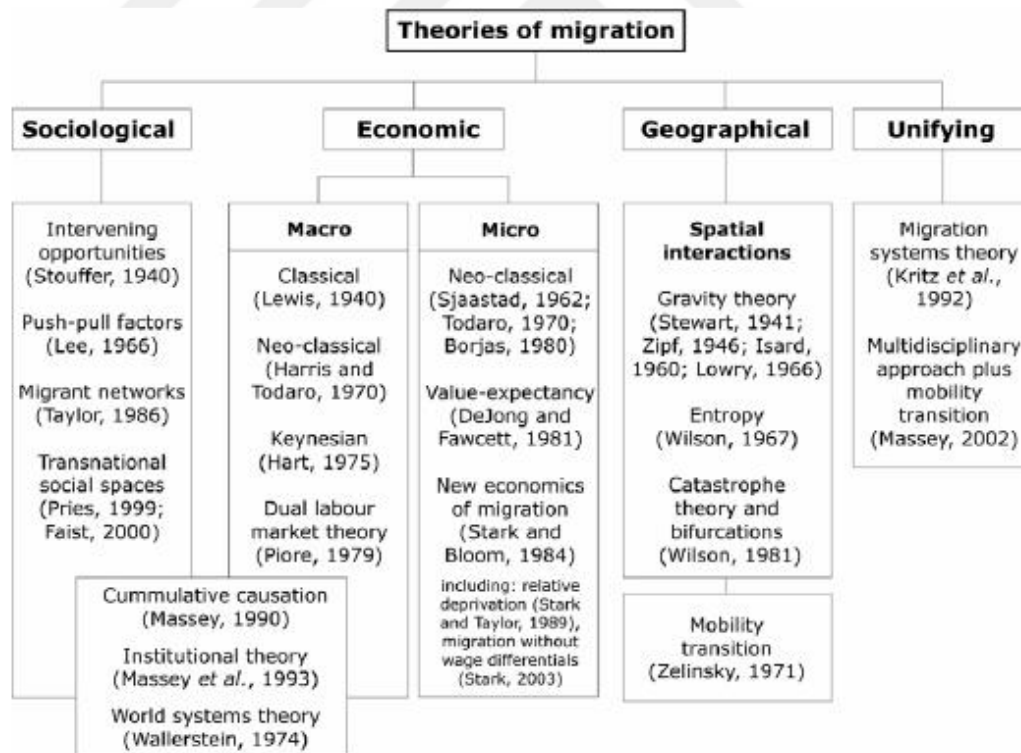
Source: Bijak, 2006

In this section, Turkey's social, economic and demographic indicators are evaluated for 1960-1979 and 1980-2010 periods. The indicators are reviewed with migration theories to explain the emigration experience in a comprehensive analysis.

IV.1.1. 1960-1980 Period

The 1960s was known as the golden age of development. Development was generally explained by economic growth models in those years. Accordingly, Turkey was affected by the paradigm shift in development. Turkey's socio-economic structure had changed from the 1950s. In the 1950s, the Democrat Party came into power and Turkey experienced structural changes in its social and economic life. The integration of Turkey into Western countries and liberalisation period led to those structural changes. At the end of the 1950s, Turkey encountered rural to urban migration, increased unemployment rate, underground economy and a slum problem (Karaçay, 2012). Development policies were very crucial governmental policies in the 1960s and the first five-year development plan was prepared during those years. Part of the basic objectives of the development plan were reducing unemployment, struggling with a lack of foreign currency and investment in high-qualified labour force by exporting domestic labour force to Western countries (Karaçay, 2012; Kolan, 1973; Unat, 2006). In line with those objectives, labour force agreements and social security agreements were signed with European countries.

In the meantime, the general trends of immigration in European countries in the period from 1960 to the present day can be considered in ten-year periods. As mentioned before, the migration movement observed in Europe in the 1960s was shaped around labour migration. There was a high demand for labour in the secondary sector, especially for Western Europe.[14] At the beginning of the period, the demand was matched by Southern European countries (Jennisen, 2004). Average net migration rates for the period show the emigration patterns in Southern European countries. Greece, Italy and Spain are the destination countries in our study, so our dataset provides information about migration patterns of these countries. The average net migration rates fluctuate from country to country, but the rate is negative for Southern Europe countries. The

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[14] Since the study focuses on 14 European countries, there is no evaluation on migration patterns of communist countries in Europe.

negative values of net migration rate identify the emigration pattern. The net migration rate in Spain is estimated as -3.1 per thousand for 1955-1960 and it is estimated as -1.2 per thousand for the following period. Italy experienced emigration in 1955-1960 with a -2.3 net migration rate. Similarly, in the 1960s, Greece had a -3.4 per thousand net migration rate. In addition to Southern European countries, some other European countries also had negative net migration rates during this period. Finland's net migration rate was surprisingly estimated as -2.9 per thousand for the 1960-1965 period. Jennisen (2004) explained the reason behind the high-level emigration in Finland. According to him, the emigration pattern in Finland depends on high level labour emigration to UK. On the other hand, Western countries experienced immigration. In time, the high demand for labour in those countries was met by developing countries. As a result of migration flows into the countries, the net migration rate reached high levels such as 6.2 per thousand for France and 9.9 per thousand for Switzerland. The high-level immigrant stock in France depended on the political conditions in Algerian (Jennisen, 2004). To meet the high labour demand in the countries, numerous migration policies were developed with the aim of attracting migrants.

In the 1970s, the immigration pattern in Europe was shaped around family reunification and return migration issues. The share of developing countries' population among immigrants began to increase in those years. Although the migrant flow to Western European countries continued, a decline in flow was seen in the second half of the decade. There are two reasons behind the decline. Oil crises in 1973/74 are one of the reasons. The crises led to a decline in the labour demand. Additionally, the developed countries had the chance to increase labour supply because baby-boomers entered the labour market. In those years, most European countries imposed family reunification policies, on the other hand they began to develop restrictive immigration policies. For this reason, the immigration movements in these years were shaped around family reunification. On the other hand, due to falling labour imports, migrants from southern European countries began to return to their countries. Therefore, another migration trend in the 1970s was return migration (Jennisen, 2004).

In the following table, there are indicators which give information on Turkey's socio-economic structure in the 1960s and 1970s. With reference to these indicators, Turkey's social and economic level sparks the explanation about the motivation behind the migration flow to destination countries.

Table IV. 1: Basic Indicators of Turkey in 1960 and 1970

PERIOD	1960	1970
Migrant Population in Europe	146.635	433.581[15]
The Share of Urban Population	%31,9	%38,5
Unemployment Rate	%3,2	%6,2
Per Capita Income	507 $	560 $
The Share of the 20% Poorest Population's Income	%5	%4
The Ratio of 15-64 Aged Population to Whole Population	%55	%54
Sectorial Distribution of Labor Force	%79-Agriculture %10-Industry %11-Services	%69-Agriculture %12-Industry %18-Services
Population	27,8 million	35,6 million

Source: HUIPS,2010; Abadan Unat, 2006; World Bank, 2010

In the 1960s, the population of Turkey was 27.8 million, 55% of the population was in the 15-64 age group and 31.9% of them lived in urban areas. The economy of Turkey in the 1960s was based on agriculture; the unemployment rate was 3.2% and the per capita income was $507. The poorest 20% of the total population had 5% of the

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15 It was derived from Abandan-Unat's (2006) study.

national income. In the 1970s, the population increased to 35.6 million people, but at the same time the unemployment rate increased and reached 6.2%, urbanisation level increased to 38% and per capita income was $560. Labour force participation in sectors changed in the 1970s with the share of labour in the service sector increasing to 18%. The immigrant population in European countries increased from 146.635 to 433.581 in ten years.

The basic determinants of migration from Turkey to Europe for the period 1960-1980 were based on economic factors. The economic conditions in Turkey and destination countries and the migration pattern of European countries in the 1960s and 1970s support this proposition. The volume of Turkey-born population in Europe in 1970 was three times the emigrant stock in Europe in the 1960s as a result of the agreements that promoted labour migration. When the migration flow from Turkey to Europe between 1960 to 1980 is examined, dual labour market theory and new economics of migration theory provide comprehensive information on the migration corridor between Turkey and Europe.

Piore (1986) explained the decision to migrate by differences in job opportunities between developed and less developed countries. He asserted that migration flow is the result of dual labour market hypothesis in developed industrialised countries. The hypothesis is about the barriers on economic improvement. According to the hypothesis, the economy is divided into two parts which are primary and secondary markets. These sectors/markets are known as high-value added and low-value added sectors. Secondary labour market is characterised by low level income, low level status, uncertainty in job conditions, difficulties in getting promotion, but the features of primary market are high level income, regular and contracted jobs, and satisfactory job conditions. Piore (1986) asserted that citizens in developed countries preferred to work in the primary labour market because of the good conditions of the market. There are a limited number of citizens who choose to work in the secondary labour market such as retirees or students. The problem of a shortage in the labour market is solved by

importing labour from developing countries. Jobs in the secondary labour market are temporary jobs and migrants are considered as temporary guest workers to solve the shortage. It is believed that the structure of the secondary labour market is attractive for migrants in order to increase their income, savings and living conditions.

Dual labour market theory explains the migration flow from Turkey to Europe in 1960-1980. European countries had signed several labour force agreements. On the other hand, the import of labour from Turkey led to expectations in Turkey to increase remittances. They hoped to work in the secondary labour market for a short period and increase their savings and abilities. It was believed that migrants were the engines of the development process in Turkey through their savings and capabilities, after they had returned to the country.

In this period, another theory explaining Turkey's migration to Europe is the new labour migration theory. According to this theory, migration behaviour, like many casual behaviours, evolves as a result of human emotions and needs. Therefore, it is required to separate migration research from classical trade theories. Stark and Bloom (1985) indicated that personal income comparisons according to reference group are crucial in terms of migration. These comparisons can be made not only in terms of physical costs and utility, but also relative deprivation and satisfaction level. It is known that the individuals who experience severe relative deprivation in a society have higher motivation to migrate. Stark and Bloom (1985) argued that the relationship between relative deprivation and motivation was one of the main characteristics of migration, and furthermore, they claimed that high income distribution inequality yields more intense relative deprivation and this increases the migration tendency. Migration process affects both the migrating individual's and society's socio-economic structures. The migration process is not only related to the result of relative deprivation, but also ability level.

The migration process is not only about individual decisions; various social groups also play an important role in this process. All costs and benefits are divided

between migrants and non-migrants. The most important benefit is migrant remittances. These remittances are shared among family members. This behaviour pattern argued by migration theory has also been supported by empirical studies. An intertemporal transfer and agreement exists between the migrant and her/his family. In a nutshell, Stark and Bloom's approach considers the family as the decision-making unit in the migration process. Furthermore, instead of a desperation or boundless optimism, they consider migration as a planned strategy. After analysing the basic characteristics of migrants from Turkey to Europe, it has been observed that these characteristics are consistent with this theory for three different reasons. The argument that relative deprivation causes migration fits into Turkey's experience of migration between the years 1960 and 1970. Gini coefficient, which shows the income distribution inequalities of a nation, was equal to 0.55 in 1960 in Turkey which implied a high level of inequality. Moreover, it was still above 0.5 in the 1970s in Turkey. Although Turkish migration experience provides evidence for relative deprivation, it is known that this experience is not only based on individual decisions; it originated in government policies. In short, the decision maker of the international movement of migration of Turkey between the years 1960 and 1980 was the government at the macro level, whereas, it was households at the micro level.

IV.1.2. Post 1980 Period

After 1980, a military coup in Turkey caused changes in the structure of emigration. While migration, which was labour migration until the 1980s, increased at the end of 1970s with family reunification, labour migration structure was fractured after the military coup and refuge and asylum seekers from Turkey to Europe increased. Even though migration activity increased with the effect of globalism, the momentum of the pre-1980 era was not present. There are two reasons why the increase was less than previous eras: Europe's tightening of migration policies and Turkey's EU membership process which was shaped according to democracy and demographics (İçduygu, 2011). Along with these two factors, migration to countries like US and Canada which are farther and have migration incentive policies became easier due to the decrease in

transportation costs. After 2000, Turkey became a transit and a destination country. Changes in Turkey's international migration scene are the result of demographic and socio-economic changes in the country.

When we look at how migration trends in European countries have changed in this period, we can see that three basic facts come to the fore. These are (i) the asylum demands that shaped the 1980s, (ii) the social networks that seemed to be well established in the 1980s, and (iii) the phenomenon of transnationalism in the 2000s. We can look at the migration trend in Europe after 1980 by taking two terms. In the 1980s, family reunification programmes were diminished, but continued in Europe. Unlike in the 1970s, in the 1980s all destination countries began to receive migrants. Despite the decline in the family reunification programmes and the decline in the demand for labour, the net migration rates were positive. This positive net migration rate is due to the economic, political and social changes that took place in the communist countries. Many non-communist European countries transformed into a destination country in those years. There was an increase in asylum seekers' applications to these countries. They also had a qualified labour migration trend. Germany, in particular, recognised the right of asylum to its immigrants the most in this period. Moreover, due to the political situation of Eastern Europe, several ethnic groups entered West Germany (Jennisen, 2004).[16]

This pattern of immigration in the 1980s increased in the first half of the 1990s. In particular, the fall of the Berlin Wall and the liquidation of the Soviet Union increased immigration mobility. In addition, the war environment in Europe in the 1990s saw increased applications for asylum-seekers. Moreover, because of the existence of historical social networks, this war environment increased the migration of several ethnic groups.

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[16] More detailed information can be found in Jennisen (2004).

In addition to historical colonial relations, immigration networks created by immigrants who had migrated from underdeveloped countries in the past term caused new immigrants to come to Europe. So, until the mid-1990s, the migration trends of European countries converged. Many European countries had a positive net migration rate in those years. It is difficult to talk about the continuation of this convergence in the 2000s. Even though the migration of refugees and the integration policies have been more restrictive, the net migration rates are still very high. These rates vary across the destination countries as well as being positive for all countries considered. For example, in 2005-2010, Switzerland had a net migration rate of 9.1 per thousand, and similarly, a net migration rate of 10 per thousand in Spain; on the other hand, Greece had 1.4 per thousand and the Netherlands had a net migration rate of 0.7 per thousand. The convergence in the 1990s changed over time. Moreover, these European countries are now fully immigrated countries.

Table IV. 2: Basic Indicators of Turkey in 1980, 1990, 2000 and 2010

PERIOD	1980	1990	2000	2010
Migrant Population in Europe	2,238,090	2,271,205	2,689,960	3,862,427
The Share of Urban Population	43.9%	59%	64.9%	69.4%
Unemployment Rate	7.9%	7.5%	6.5%	11.9%
Per Capita Income	$1,890	$2,300	$4,190	$9,950
The Share of the 20% Poorest Population's Income	4%	5%	5%	5.8%
The Ratio of 15-64 Aged Population to Whole Population	56%	61%	65%	67.2%
Sectorial Distribution of Labour Force	61% Agriculture 16% Industry 24% Services	47% Agriculture 20% Industry 33% Services	36% Agriculture 24% Industry 40% Services	
Population	44.7 million	56.5 million	67.8 million	73.7 million

Source: HUIPS, 2010; World Bank, 2010; TURKSTAT,2015

From 1980 to 2010, Turkey has undergone many structural changes. A summary of these changes is provided in Table IV.2. In 1980, Turkey was a developing country in which 43.9% of 44.7 million people were urbanised, the economy was based

on agriculture, gross national product per capita was $1890, working age population was 56% of the total population. In the 2000s, we see that many indicators changed rapidly. In twenty years, the population increased by 23 million, per capita income more than doubled and Turkey became more urbanised. In the 2010s, the population increased to 73.7 million people and per capita income doubled again and reached $9,950. Though there has been an improvement in per capita income, an increase in unemployment rate is seen. Unemployment rate was announced as 11.9% in 2010. Especially when you look at sectorial distribution of workforce, Turkey's economy shifted from an agriculture based economy towards a service industry oriented economy. In 2000, working age population between the ages of 15-64 comprised 65% of total population and it increased to 67.2% in 2010.

While pre-1980 era is explained by economic migration theories, the most suitable theories to explain the post 1980 era are sociology based theories. If we exclude refuge and asylum requests due to military coup, migration activity due to family reunifications and communication channels were shaped according to migration networks theory especially between 1980 and 1990.

Migration networks theory explains migration motives with friendship and family relationship between former immigrants and non-immigrants. While former immigrants and their past social relationships decrease the risk and cost of new migration waves, social capital of former immigrants increase migration possibilities of their circles. Due to the nature of friendship and family relations, in their destination every new immigrant causes new migration waves to occur with less cost (Massey et al., 1993). The basic elements of migration networks theory are as follows and Turkey's migration activities to European countries in the period between the end of 1970s and the beginning of 1990s have characteristics matching these elements.

1. International migration, once started, continues until networks spread to the point that almost everyone in the migrating country is able to migrate without facing

difficulty and after this point migration starts to decrease. 2. The causality between migration flow between origin and destination and wage differences or employment rates is not strong. Although these are initial factors for the decision to migrate, it is no longer the reason due to the decrease in migrations costs and risks by the development of migration networks over time. The effect of initiations of migration remains in the background after developing a network in the destination. 3. Once international migration becomes institutionalised through the creation and build-up of migration networks, it becomes independent from structural or personal reasons, which caused migration in the first place. 4. After the networks spread and risks and costs of migration decrease, socio-economic selectivity of migration waves decrease and immigrants start to represent more of the migrating society. 5. Governments may expect to face real difficulties in controlling migration waves once they start. Because the creation of networks is completely out of their hands and no matter the policies, networks emerge. 6. Some migration policies can serve the purpose of controlling migration. For instance, policies supporting family reunification strengthen networks by providing priorities to blood relatives.

Emigrants from Turkey between the end of the 1970s and the beginning of the 1990s were free from the initial state policies. Migration became institutionalised because of decreasing costs and became harder to manage instead of migration laws enacted by governments. On the other hand, with incentives of countries who request continuance of migration activities, family reunification programmes were implemented and labour migration became a phenomenon that developed together with social capital and social networks.

Post 1990s era gained a multi-dimensional and dynamic status with the effect of globalism. Basic defining theory of migration activity starting from the 1990s up until now is transnational mobility as stated in the migration literature (Karaçay, 2012). It is stated that people are related with more than one place and create connections with more than one place due to transnational mobility and globalism (Özkul, 2012). Because of

the connections with more than one place, this is a migration type which is multi-cultural, in which emigrants state their identities without being bound by a country and sometimes identities with hybrid cultures emerge. If migration activities between Turkey and Europe are examined, people define themselves as European Turkish and people create bridges between these countries with their economic, political, cultural activities, which is especially dominant in the 2000s (Karaçay, 2012).

Figure IV.3 shows the demographic change and migration policy in Germany between the years of 1950-2010. The figure is used to follow the changes in migration policy and demographic structure of country.[17] We assert that the emigration from Turkey to European countries is related to many factors of European countries, as well as demographic structures of these countries. In this regard, the following figure is showed to explain the demographic structure and migration policies of destination.

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[17] Germany is the host country, where most of the Turkey-born emigrants live in. Graphics on age structures, demographic indicators and migration policies of other destination countries are shown and explained in Appendix A. Migration between Turkey and European countries is linked to many demographic indicators in European countries. In the light of the argument, it is shown for each destination country how these countries have been changing from 1950 to the present day and how they have implemented policies.

Figure IV. 3: Demographic Transition and Main Migration Policies in Germany, 1950-2010

DEMOGRAPHIC TRANSITION in GERMANY: 1950-2010
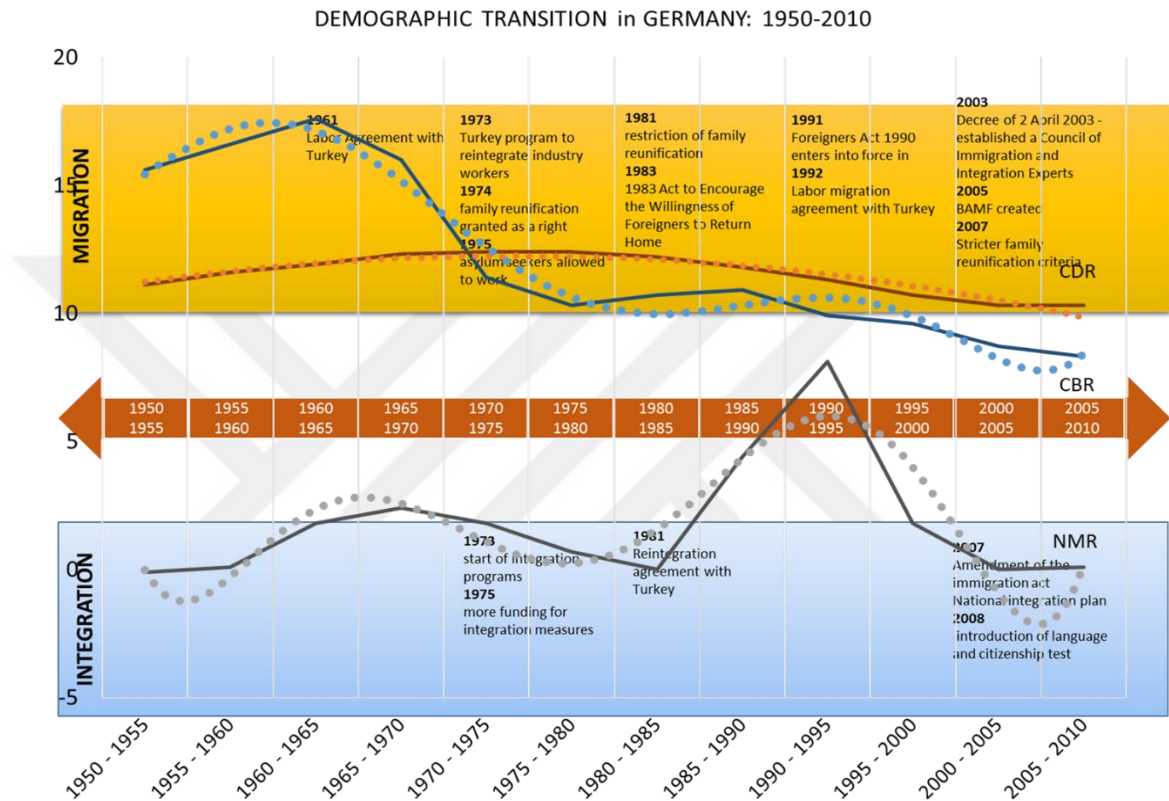
The crude birth rate in Germany in 1950-1955 is at 15.6 per thousand. In the following two periods, the rate increased to 17.6, but fell drastically during the 1970-1975 period and became 11.4. In the following periods, this decline continued even if it was not that hard. Between 2005 and 2010, the crude birth rate in Germany dropped to 8.3 per thousand. On the other hand, such sharp decreases in crude death rate have not been observed. The crude death rate, which was 11.1 in 1950-1955 period, was 10.3 in 2005-2010 period. For the first time in 1970-1975 the crude death rate was above the crude birth rate. In all subsequent periods, the crude death rate was higher than the crude birth rate. When the net migration rate is examined, it can be seen that Germany is a country that has been destination country since 1950, though immigrant stock was not at very high levels. Although the net migration rate tended to decline from time to time until 1980, it has often been more than 1 since 1960. The only was estimated to be zero

in the 1980-1985 period. Between 1985 and 1990, the net migration rate was 4.4, and it rose to 8.1 in the following period. After this period, it tended to fall again.

While the net migration rate varied over time, various policies for migration and integration in Germany were developed and put into practice.[18] When 1960's is evaluated, it is seen that Germany signed labour recruitment agreement with Turkey in 1961. After several labor agreements with labor exporter countries, a first law on foreigners was launched in 1965. The law introduced a permanent residence permit after five years legal stay in Germany. In the next decade, a more restrictive regulation was introduced. Recruitment of foreign workers were restricted by increasing fees for hiring foreign workers. In 1973, a new program for Turkish industry workers was developed after the agreement of Ankara Agreement of 1972. The target group of the program was return workers. The aim of the program was reintegration knowledge of return industry workers in order to support industrialization in Turkey. In the decade, family reunification was accepted a right for immigrants in Germany. Additionally, the ban for asylum applicants to work during their application became invalid in 1975. In 1981 migration policy became more restrictive than the previous period with restriction of family reunification. The 1983 Act was focused on Korea, Morocco, Portugal, Spain, Turkey, Tunisia and Yugoslavia to encourage willingness of immigrants to return home. It covered an assistance system with a financial incentive. The two-new resident permit was introduced after the Foreigners Act 1990 came into force in 1991. There were new labor agreements with several countries in those years. One of them was signed with Turkey and it focused on service workers. A Council of Immigration and Integration Experts was developed in 2003 with the aim of evaluating the effect of current immigration to Germany on the economy and labour market, assessing progress in the integration of immigrants. New Immigration Act came into force 2005 and the BAMF as centralised Federal authority for migration and asylum was established with the Act. A more restrictive family reunification rules were introduced in 2007 by proof of basic

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[18] Migration policies implemented by the Federal Republic of Germany are shown and explained in the graph. No assessment on East Germany is made.

knowledge of German. It is seen that the encouraging migration policy became restrictive from 1960 to 2010. The labor force agreements with developing countries in 1960s attract immigrants, but the high level of migrant stock lead to difficulties in managing their integration and adaptation. In those years, the expectation is the labor migrants would return to their origin country, but those migrants decided to stay.

In this regard, Germany has had several integration policies and strategies for immigrants. In 1973, an integration program was started in Germany. The program covered an assistance program for housing and social rights. It was funded by increasing tax on employment of foreign labor. The funds on language courses, vocational trainings of immigrants and social services for them increased from 22 million D Mark to 30 million D Mark. An action plan was prepared in 1977 on the integration of immigrants, although Germany refused to consider the country as an immigration country. A re-integration agreement with Turkey was signed in 1981. The aim of the agreement was easing re-integration of Turkish worker in Turkey. In 2000's a new national integration plan was prepared. The plan included "*400 measures, covered improvement of integration courses, integration of migrants into the labour market, stimulation of "ethnic economies", language support and stronger early intervention policies for children of immigrants*" (DEMIG, 2015). In 2008, a new amendment of the 2000 nationality act introduced requirement of sufficient level of language and additionally, it introduced integration tests for citizenship.

The migration policy in Germany showed variations in time. At the beginning of 1960s, it was migration promoting policies, but the high level of immigrants in the country lead to restrictive migration policies. The changes in restrictiveness of migration policies have also been seen in the other destination countries.

IV.1.3. An Assessment on Turkey's Mobility Transition

As noted before, there is a linkage between modernisation processes and emigration or immigration status of countries, because migration activity is an extension

of economic and social structures. The theory which explains this linkage best is Zelinsky's (1971) mobility transition theory even if it does so within the context of modernisation. Even though the theory dwells on internal migration and rural-to-urban migration phenomena, it explains and projects the relationship between development (modernisation) and migration according to the periods of demographic transition (Sert, 2012).

According to the model, population movement in massive numbers is seen in early transitional societies, the late transitional societies and the advanced societies[19]. Rapid decline in mortality, high level fertility and rapid rate of natural increase are the main characteristics of early transitional societies. In these societies, rural to urban migration is seen and there is emigration from the early transitional country to colonies or attractive destinations. There is also immigration of high-skilled labourers from developed regions of the world in limited numbers (Zelinsky, 1971).

Regarding stages of demographic transition[20], Turkey experienced pre-transitional stage of the demographic transition in the early 1920s (Hancıoğlu et al., 2004). In those years, there were shortages in the labour force due to wars and *the governments considered high fertility to be necessary* (Turkish Statistical Institute, 1995). In 1955, the rate of crude births was 48 and reached its highest level (Koç, Eryurt, Adalı, & Seçkiner, 2010), besides the crude death rate was declining, so the population doubled and it increased from 13 to 24 million (Turkish Statistical Institute, 1995). Especially in the period up to the 1950s, migration between rural and urban areas was very low due to the fact that the economy of the country was based on agricultural production (Eryurt, 2010; Turkish Statistical Institute, 1995). After 1950, migration started from rural to the urban. In this period, it is impossible to talk about the existence of international migration at high level except forced migration.

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[19] The premodern traditional society and a future superadvanced society are left out because Zelinsky (1971) explains that there is only slight international migration in these societies.
[20] In this study, we accept that the demographic transition theory reveals the transformations in the development level of Turkey.

The next stage of the demographic transition is late transitional stage. A major decline in fertility, a decline in mortality and a significant but slowing natural increase are the main characteristics of the late transitional stage (Zelinsky, 1971). Parallel to the demographic transition, there are still major movements from rural to urban. Additionally there is a decline in the flow of migrants to colonists. Emigration may decrease in this stage (Zelinsky, 1971).

Toros (2015)[21] showed the late transition stage of demographic transition in Turkey between the years 1950-2010. In our study, we accept the year of 1955 as the beginning of this stage. When we accept the late transition period as 1955-2000, we can see that the period shows migration patterns of both early transitional stage and migration patterns of late transitional stage because of the long period. Migration to urban from rural had just begun in the 1950s.

> *"Up to this time there was some growth of urban population in the same way that there was growth of rural population but no important structural shift. The growing momentum of economic change, with jobs increasing faster in urban than rural locations, brought large changes after the 1950s. The proportion urban rose from 22.5 per cent in 1955 to 51.1 per cent in 1985"*(Turkish Statistical Institute, 1995, p. 5)

With the 1960s, labour agreements with European countries ensured the start of emigration. These two-migration patterns correspond to migration characteristics that took place during the early transition phase as expressed by Zelinsky (1971). The migration from the rural to urban was still mostly seen in this period, although the

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[21] In this study, changes in the development level of Turkey are explained by demographic transition stages. This transformation of Turkey has been shown in the following part of this chapter by a graph in Toros' (2015) study. The graph summarises the transformation of Turkey from a less developed country to a more advanced country with a demographic transition perspective. The stages of demographic transition are shown in Figure IV.3. Demographic transition stages are generally explained by three periods; (i) first stage of transition, second stage of transition and third stage of transition. The first stage of the transition started in 1923 to about 1950, the second stage of period is from 1955 to 1985 and the third stage is from the 1980s. In our study, we follow the classification in Toros' (2015) study to compare and explain mobility transition of Turkey.

internal migration was slightly reduced. In the 1990s, the emigration level decreased as expected in the late transition stage.[22]

In another phase, advanced transition stage, fertility has remained stable mortality remained stable at low levels and there was a minor natural increase. In this stage, the characteristics of mobility transition were "*(1) Residential mobility has leveled off and oscillates at a high level, (2) Movement from countryside to city continues but is further reduced in absolute and relative terms, (3) Vigorous movement of migrants from city to city and within individual urban agglomerations, (4) If a settlement frontier has persisted, it is now stagnant or actually retreating, (5) Significant net immigration of unskilled and semiskilled workers from relatively underdeveloped lands, (6) There may be a significant international migration or circulation of skilled and professional persons, but direction and volume of flow depend on specific conditions, (7) Vigorous accelerating circulation, particularly the economic and pleasure-oriented, but other varieties as well"* (Zelinsky, 1971, p. 230).

Figure IV.4 shows that Turkey is in another demographic transition stage after 2000. During this period, Zelinsky's (1971) expectations for the advanced stage of mobility transition have been fulfilled. In Turkey, there was a decrease in migration from the rural to urban, and an increase in the migration from urban to urban. In addition, significant low-skilled or semi-skilled labour immigration from relatively underdeveloped regions has started since the 2000s. Another migration movement that took place in Turkey in the direction of Zelinsky's (1971) hypothesis is the emigration of high-skilled people to relatively developed regions.

As Turkey experienced transformation in its development level, many changes in its structure have occurred as well as changes in its migration pattern. Above, Zelinsky's (1971) model is taken into consideration and the migration pattern changes that took place during this transformation are briefly explained. When Turkey's

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[22] This decrease is seen in 10 of the 14 countries that are taken as the destination country in this study. In Germany, Italy, Denmark and the Netherlands, an increase is observed instead of a decrease.

international migration movement is analysed, different theories explain migration before and after 1980, whereas the whole 1960-2010 period, Zelinsky's (1971) mobility transition hypotheses are in force. Both the demographic transition and development levels of Turkey, as well as migration patterns parallel to them, reveal the validity of the hypotheses.

Figure IV. 4: Demographic Transition in Turkey
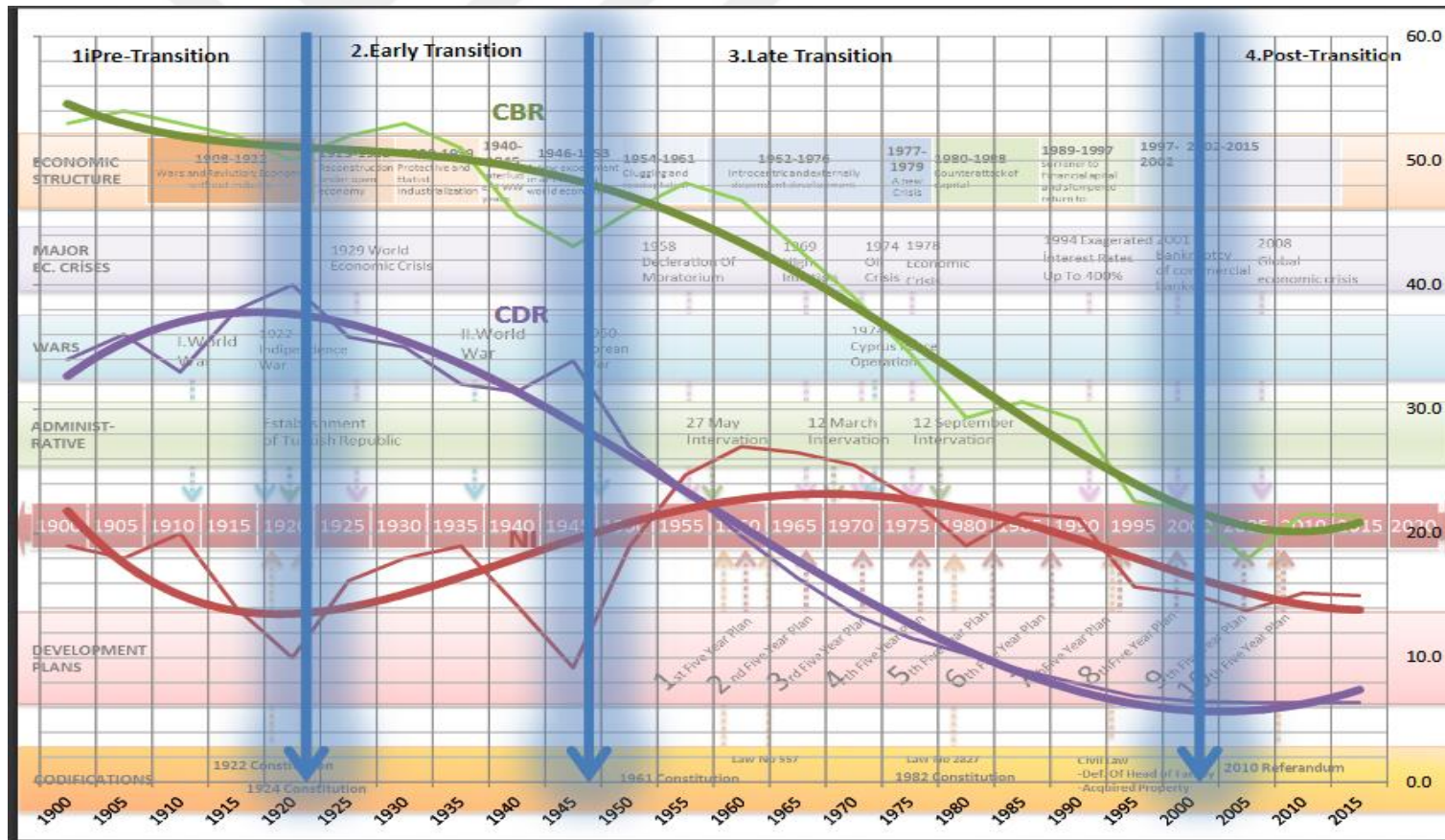
IV.2. A SAMPLE MODEL PROPOSAL FOR MIGRATION PATTERN OF TURKEY

When the migration literature is examined, Southern European countries, after 1970s, converted to immigration countries from emigrant countries, especially in the last twenty years when they became the centre of migration activity (Salomoni, 2012). Unlike North Europe, this transformation experienced by Southern European countries stems from late development due to their late integration into the European economic system (Mingione, 1995). In the migration literature, the Mediterranean Migration Model – which is based on the similarities and common properties of these late developing countries – is mentioned (Salomoni, 2012). Key features of Mediterranean Migration Model are summarised as follows (Salomoni, 2012):

• Since the 1970s, when a decrease in the outward migration activities of Southern European countries - even completely ceased in Italy at some point - was in question, these countries started to receive immigrants. Even though it is claimed that Southern European countries are preferred due to both their geographical position and tighter migration policies implemented by North European countries, the situation experienced by these countries stems from their structural changes in economical, sociological and cultural life within the country. At the end of this experience, the rate of immigrants within the population increased. When Italy is examined based on the data in 2006, the increase in the immigrant population is more understandable. According to the statistical data of 2006, the number of regular immigrants present in Italy was about 3,012,000, and the number of irregular immigrants was about 600,000 (Gülfer & Öner, 2012).

• Rules and policies related to migration are insufficient and unclear. They are targeted by irregular immigrants due to the open status of borders for many years and pardon laws were enacted often. Due to this lack of policy, it is seen that immigrants are more fragile compared to other system immigrants and their integration is more difficult, and also unregistered immigrant numbers increased.

• With the borders being more open than ever, it is seen that male immigrant workers who come to work in the agricultural sector as seasonal workers start to become permanent.

• Moreover, immigrants to Southern European countries take place intensively in the service sector as seen globally. Different from the global situation, the immigrants in Southern Europe concentrated on household services, mostly working as servants, nurses or elderly caretakers. Although social state system is in a good position for pension funds, it fails to satisfy other requirements of a social state. Many of a social state's duties are carried out by informal relations, intergenerational transfer and familism. Therefore, along with the entrance of women into the labour force, the feminisation of migration in these countries is in question (Gülfer & Öner, 2012; Salomoni, 2012).

When Turkey is examined, even before being the attraction centre of Syrian immigrants because of the civil war in Syria, 2% (1.3 million individuals) of the Turkish population in 2000 was foreign-born. In Turkey, there were 187,000 denizens in 2006 and there were 336,000 Afghani, Bangladeshi, İranian, Iraqi, Pakistani and Syrian irregular immigrants in 2007 (İçduygu & Sert, 2009) and after the war in Syria those numbers increased. Therefore, Turkey is a transit country by the beginning of the 2000s and it is an attraction centre of the region by the 2010s.

From a historical perspective, in the inversion process from emigrant country to an immigrant country, according to the human development indicators, Turkey - a late developing country, even later than Southern European countries, - experienced a similar pattern of these countries' experiences 25-30 years ago. Turkey is a member of Mediterranean Country Groups based on both rapid improvement in social economic indicators in the last year and the change in the migration pattern by the 2000s, but in addition to this the status of not being able to develop an extensive and regular migration policy as well as domination of informal relations within the society, from now on, the migration waves that Turkey is going to experience will be similar to Italy and other Southern European countries.

CHAPTER V: METHODOLOGY

In the study, the aim is to analyse the determinants of Turkish emigration to European countries between 1960 and 2010. We sought to answer why 4 million people decided to migrate to European countries. We analyse whether structures of destination countries or Turkey's conditions affect the decision to migrate.

This section presents the methods and data sources. We developed two different model groups. In the first, we extended the gravity model and set up these models that will reveal the emigration experience of Turkey with the factors suggested by the literature. Later on, we assume that there is a non-linear relationship between the level of development in Turkey and migration, and we built a quadratic model. We used two different theoretical methods in the gravity model. Massey et al. (1993) divided migration theories into two parts, one related to decision making for migration and the other on expansion of international migration. In this context, we used two different modelling methods. First, we investigated the determinants of the Turkish decision to emigrate to European countries using static panel data regression. Then we used dynamic panel data regression method as an econometric analysis technique for investigating the determinants of international migration expansion.

The dataset included time dimensions and cross-sections. If the number of observations was not sufficient in both the cross-section and the time dimensions, the panel data regression allows for the creation of models and analysis of the determinants. For this reason, panel data were used as an econometric method. Demographers frequently use panel type surveys such as Gender Generation Surveys to investigate population dynamics, but the panel data regression is not commonly used to analyse the factors that affect components of demography. In this regard, this study is one of the pioneer studies among population studies in Turkey.

The first part of the section includes the hypotheses of the study. The second part consists of panel data regression, its assumptions and related tests as well as gravity modelling. The third part introduces data sources of the study and the last part explains indicators, variables and data generation procedure.

V.1. HYPOTHESES

Before going further, it is necessary to introduce our main hypothesis as follows:

Hypotheses on Gravity Model

- International migrant stock depends on the distance and the population ratio of the two countries. With increasing distance between capital cities of origin and destination country, the number of migrants will decrease. In our study, the destination countries are European countries. In this regard, it was expected that the distance between countries would have little or no effect on the propensity to migrate because the cost of migrating to any country within Europe was almost the same.

- According to the gravity model, with a higher population growth rate (or higher population size) in destination countries, higher international migration is expected. Similarly, an increase at the population size in Turkey will have a positive effect on the emigrant stock in the destination country.

Hypotheses on Demographic Factors

- Demographic indicators such as median age, total dependency rate, life expectancy at birth and population growth have an impact on international migration. The higher the median age, life expectancy at birth, total dependency ratio in the destination country, the higher the Turkey-born labour migrant stock will be in destination countries.

Hypotheses on Economic Factors

- Per capita income calculated according to purchasing power parity, unemployment rate, poverty rate and unequal distribution of income have an impact on international migration. With a higher ratio of per capita income in destination countries to Turkey, the emigration rate from Turkey to destination country will be higher.

- The lower the unemployment rate, poverty rate and unequal of distribution of income in Turkey compared to the destination country, the emigration rate from Turkey to destination country will be lower.

Hypotheses on Social Factors

- Urbanisation and level of education have an impact on international migration mobility. Urbanisation and level of education have been used as development measures many times in the literature. Especially, by the 1960s, in the structural change theory of Lewis, urbanisation is the proxy of development indicators. In the 1990s, level of education has also become one of the components of development indicators in the context of human development measures. It is expected that a higher urbanisation level of the destination country attract more emigrants from Turkey in destination countries. An increase in the urbanisation level of Turkey will have a positive effect on the emigrant stock in destination countries.

- An increase in the level of education in destination countries will attract more emigrants from Turkey in destination countries. Similarly, an increase in the level of education in Turkey will have a positive effect on emigration.

- Social networks will increase international migration rates. Emigrants that settled in the destination country earlier will increase the number of emigrant stock due to minimising risks and costs.

Hypothesis on Stimulating Factors

- Political instruments that determine the migration policies such as bilateral labour agreements, entry and exit regulations of the countries, recognition of university degrees, family reunification programmes and acceptance of asylum seekers have an impact on international migration rates. These kinds of migration policy instruments in destination countries will inevitably increase Turkey-born migration mobility.

Hypothesis on the Relationship between Development and Migration Pattern

▪ Development has an impact on international migration. The development level of Turkey between the years 1960 and 2010 will have an inverted U-curve impact on emigration from Turkey to Europe; migration increases first and then decreases like an inverted U-shape as the level of development improves.

V.2. METHOD of ANALYSES

V.2.1. Panel Data Regression

In the literature, it is known that there are different types of data sets such as cross-sectional, time-series or combined version of them; pooled cross sectional and panel data. Wooldridge (2012) explains pooled cross-section as a data set which includes both cross-sectional and time series features. For example, if two cross-sectional household surveys that were conducted in 1985 and 1990 with the same questionnaire and different random sample were combined, it would be named as a pooled cross section data. A pooled cross section data provides researcher opportunity to increase the sample size interested in, so that increases the effectiveness of research that help to analyze how the key relationship has changed over time (Wooldridge, 2012).

A panel data is different from the pooled cross-section. Although panel data has time-series and cross-sectional features, it has a distinguish feature. It includes individual heterogeneity in the model and time-series dimension for each cross-sectional member. For example, emigration flows to traditional destination countries for the years 1980, 1985 and 1990 is researched, data is collected for the same set of destination countries in order to construct panel data models. The key distinguished feature of panel data from pooled cross-section is collecting data from the same cross-sectional unit (same firms, same individuals, and same countries) for a given time period (Wooldridge, 2012).

Panel Study of Income Dynamics (PSID) collected by the Institute for Social Research at the University of Michigan and the National Longitudinal Surveys (NLS) collected by the Bureau of Labour Statistics are the famous US panel datasets. Panel data collection began at the end of 1950's in USA and at 1980's in Europe. German Socio-Economic Panel, The British Household Panel Survey, and The Swiss Household Panel (SHP) are the well-known panel survey studies for Europe (Baltagi, 2005).

Panel data analyses is an estimation method for economic relationships by using panel data (Tatoğlu, 2012). The general panel data model is shown as;

$$Y_{it} = \alpha_{it} + \beta_{kit}X_{kit} + u_{it}$$

i = 1, …………..,N ; t =1, ………….., T ; k =1,………….K

In the formula, Y is a dependent variable, X is independent variables, α is constant term, β is slope parameters and u is error term. i is a subscript that shows individuals in the model such as firms, cities, households or countries and k shows number of variable. The other subscript t shows time period in the model (Tataoğlu, 2012). Panel data analyses provide a set of benefits for econometric analyses. One of the advantages of panel data analyses is about unobserved effect of each entity. The other strong sides of panel data analyses are listed as follows (Baltagi, 2005; C, 2003; Klevmarken, 1989);

- Controlling for individual heterogeneity.
- Panel data give more informative data, more variability, less collinearity among the variables, more degrees of freedom and more efficiency.
- Panel data are better able to identify and measure effects that are simply not detectable in pure cross-section or pure time-series data.
- Panel data models allow us to construct and test more complicated behavioral models than purely cross-section or time-series data.

Every additional time period of panel data is not independent of previous periods. As a result of the nature of the data, the standard errors of panel data

estimators need to be adjusted. This feature of panel data analysis explains the requirement of more complex models and estimation methods than cross-section data analysis. Panel data are much complicated than other type of data (Cameron & Trivedi, 2009). The complex structure leads to classification of linear panel data models.

Linear panel data models are classified as homogenous models and heterogeneous models. Contemporary panel data regression models have difficulties in estimation by heterogonous models, there have been limitations at these types of models. In this study, we have focused on homogenous models, random effect models and fixed-effect models for static analysis part. Linear panel data models classification is showed in the following diagram. This classification is made according to change of parameters, whether time dependent or cross dependent (Tatoğlu, 2012).

Figure V. 1: Classification of Linear Panel Data Regression[23]
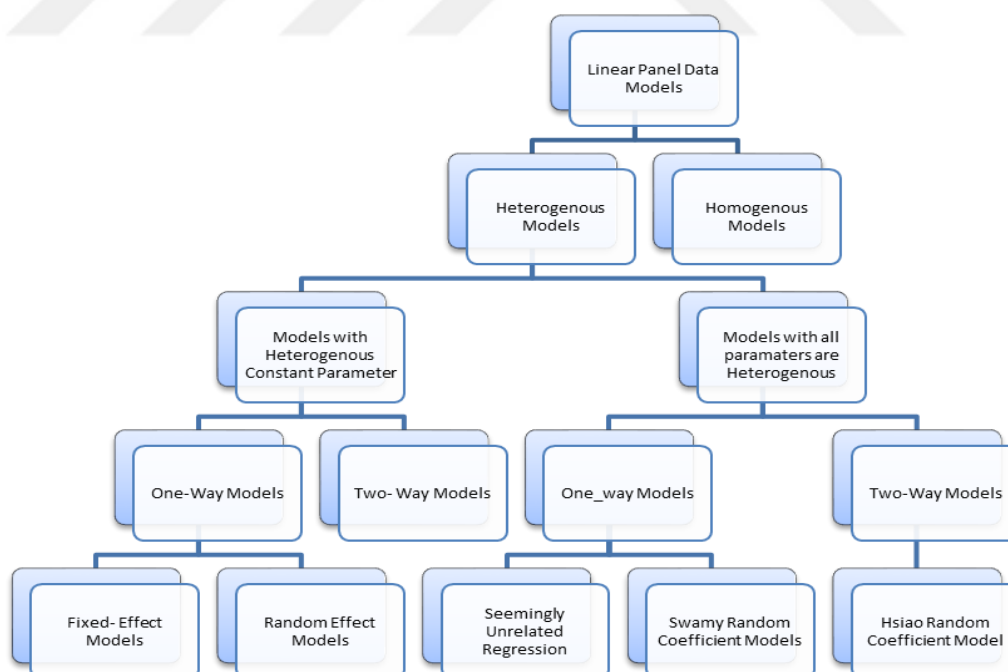
Source: Based on classification in Tatoğlu (2012)

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[23] Tatoğlu's (2012) study is used in order to constitute the diagram. You can find furthermore information about the
other types of heterogeneous panel on mentioned study.

Homogenous Model is a model that has constant intercept (β_0) and constant slope coefficient (β_1). The model is known as classic model. It is shown as;

$$Y_{it} = \alpha + \beta X_{it} + \varepsilon_{it}$$

i=1,…………., N   and t=1,…………………………., T

Pooled ordinary least square (OLS) method is used for the pooled cross-section data. Pooled OLS method estimator has the assumptions that there is no time or individual effect in the model. Intercept and slope parameters are constant.

There are basic assumptions about residual in econometrics in order to predict correct and best parameter estimators. The prediction of parameter estimators must obtain assumptions about consistency and efficiency. The assumptions of pooled cross-section model are listed. Assumption 1 and assumption 2 are necessary to obtain consistency condition and assumption 3 is necessary to obtain efficiency condition.

Assumption 1: $E\ (X_{it}{}'u_{it}) = 0$

The assumption refers to exogeneity that refers there is no correlation between independent variables and residual terms.

Assumption 2: There is no exact linear relationship among the independent variables. The assumption refers to no multicollinearity problem in the model.

Assumption 3: $E\ (u_{it}\ u_{it}') = \sigma^2\ I_t$

There is no autocorrelation and heteroscedasticity problem in the model.

Assumptions about the exogeneity, serial independence, homoscedasticity and multicollinearity are valid both for pooled cross-section data and panel data.

Fixed-effects model is used when the impact of variables varies over time. In the model, there is time-invariant effect for every unit that is probably correlated with the regressors. Fixed effect remove the effect of time-invariant characteristics

from the predictor in order to analyze the predictor's net effect (Torres-reyna, 2010). The fixed effect model is;

$$Y_{it} = \alpha i + \beta X_{it} + \varepsilon_{it}$$

If the model is showed as above, the assumption will be that there is correlation between αi and X_{it} for the fixed effect model (Torres-reyna, 2010).

The other one-way error component model is random effect model. Random effect model assumes that individual effects are uncorrelated with the regressors of the model. According to Torres-Reyna (2010), "The rationale behind random effects model is that, unlike the fixed effects model, the variation across entities is assumed to be random and uncorrelated with the predictor or independent variables included in the model". In fixed effect models, time invariant variables such as gender, education level or distance are omitted in the model, but random effect model provides including these time invariant variables in the model (Torres-reyna, 2010). Greene explains the main difference between random effect model and fixed effect model:

"...the crucial distinction between fixed and random effects is whether the unobserved individual effect embodies elements that are correlated with the regressors in the model, not whether these effects are stochastic or not" (Greene, 2012, p.387).

Random effect model is shown as;

$$y_{it} = \mu + \beta_{it} + u_{it}$$

There are several estimators for these models. Table V.1 summarize the basic estimators for each model.

Table V. 1: Panel data model and Its Estimators

Model Type	Estimator Methods
Pooled Cross-Section Data	First Difference Method
	Pooled Ordinary Least Square
Fixed Effect Model	Least Squares Dummy Variable Model
	Within Estimator
	Between Estimator
Random Effect Model	Maximum Likelihood Method
	Generalized Least Square Method
	Feasible Generalized Least Square Method
	Two-Step Generalized Least Square Method

Source: Tatoğlu (2012)

The table shows the various models and estimation methods. The difficulty for an application of panel data analyses is choosing the appropriate model. There are several tests for choosing the best-fit model.

The research topic and assumptions of researched theory sometimes simplify choosing the best-fit models. It is considered that choosing the best-model is based on decision about choosing random effect model or fixed effect model. However, choosing the best-fit model for panel data regression has another model option that is known as pooled panel data model. As a result, the decision is based on following options; (i) decision on choosing fixed effect model versus pooled model, (ii) random effect model versus pooled model, (iii) fixed effect versus random effect model. The method that only considers the one decision criteria is not a proper method.

F-Test, Likelihood Ratio (LR) test, Score Test and Breusch-Pagan Lagrange Multiplier (LM) test are used to test whether there is unit or time effect. F-test is used for validity of classic model. The null hypothesis of the test is written as; " $H_0: \beta$ =

β". If H_0 cannot be rejected, the best-fit model for data is pooled data and pooled ordinary least square estimator method is decided to use. LR test is used to decide between random effect model and pooled data model. H_0 hypothesis of the model is based on validity of classic model. If H_0 cannot be rejected, the best-fit model for data is pooled data and pooled ordinary least square estimator method is decided to use. If H_0 is rejected, the decision will be choosing random effect model and using its estimators. Bottai (2003) derived Score Test from LR test. It tests the classic model versus random effect model. The other testing classic model versus random effect model is Breusch-Pagan Lagrange Multiplier (LM) test and LR test (Tatoğlu, 2012)[24]. Hausman (1978) developed Hausman test for model specification. The test is also used for panel data model selection. Null hypothesis of the Hausman test is that individual effects are uncorrelated with the regressors of the model. The alternative hypothesis of the test is about the correlation between the individual effect and the regressors of the model (Reyna, 2010).

After choosing the best-fit model for data, model is tested for assumption in order to control bias from assumptions. It is known as diagnostic check. If the model does not fulfill the assumptions, adjusted procedures are performed and the model is estimated again. There are different adjustment methods for each model type. In this model the focus is adjustment procedures for random effect models. Brown and Forsythe (1974) test and/or adjusted Wald tests are performed in order to diagnose the heteroscedasticity problem in the random effect model. If the problem is diagnosed, White standard errors will be used in order to adjust the estimators. The other problem will be autocorrelation in the random effect models. The diagnostic tests for autocorrelation are (i) LBI test which is developed by Baltagi-Wu in 1999 and (ii) Bhargava, Franziniand and Narendranathan (1982) panel Durbin-Watson statistic (Tatoğlu, 2012).[25]

In our study, we estimate models for static model and dynamic model at the same time. Heretofore, static panel data regression, its estimators, assumptions on

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24 Check please Tatoğlu's study for further information about the tests and model selection procedure.

[25] For further information about diagnostic tests and adjustment methods, you can see Baltagi (2005), Cameron (2009), Greene (2012), and Tatoğlu (2012).

error term, diagnostics and adjustment procedures are summarized. It is essential to use advanced panel data analyses in this study. Dynamic panel data analysis that is one of the advanced panel data method provides investigating effects of social network on migration decision to European countries between 1960 and 2010 years.

Dynamic panel models include the lag value of dependent variable into the models that leads to disturbance at the assumptions of error term. When the lag of dependent variable is included to model, exogeneity assumption of model is not valid any more. The form of dynamic panel regression is shown as follows:

$$y_{it} = \alpha_i + \beta x_{it} + \delta y_{it-1} + \varepsilon_{it}$$

There are two main methods in order to overcome the problems about endogeneity. Instrumental variable methods and Generalized Methods of Moments (GMM) are used to predict unbiased and consistent estimators. Balestra and Nerlove obtained dynamic panel model by using lag values of the strictly exogenous variables as instrumental variables for the lag value of dependent variable and use ordinary least square estimator. On the other hand, Anderson and Hsio use first difference method in order to obtain instrumental variables. The last method is GMM that is developed by Arellano Bond. Econometrists generally recommends GMM as a most appropriate method in the case of the lagged dependent variable (Temurov, 2014).

V.2.2. Gravity Model

Although gravity model has been very useful to analyze the different aspect of the social science, it is similar to Newtonian Law of gravitation in physic. These models have been commonly used in the analyses of trade, migration or foreign direct investments, whether there are intentions to use because of the lack of data availability generally it is used for international trade models.

The basic principle of Newtonian Law of gravitation, that the force between two bodies is related to the size of bodies and inversely related to the distance between them, is valid for gravity models in phenomenon of social science. For migration studies, gravity models state that migration from origin to destination is

directly related to population of origin, destination, and inversely related to the square of the distance (Greenwood, 2005). The basis for this explanation for migration is based on Ravenstein's laws. In the 1940s, the idea of Newton's law of gravity which would apply to many disciplines in the social sciences. The most common use of the equation on traditional gravity model in the following format was established:

$$M_{ij} = G \; x \frac{P_i^{\beta 1} P_j^{\beta 2}}{D_{ij}^{\alpha}}$$

In the formula, Mij represents the migration from region "i" to region "j", P_i and P_j represent population of origin and destination, D_{ij} is the distance between "i" and "j", G is a constant, β_1, β_2 and are elasticities.

With 1960's gravity models have been modified by including several socio-economic variables which are considered as influence migration decision of individuals (Greewood, 2005). Income has been considered as one of the main factor for the decision of migration. The theories of migration and empirical migration studies in those years took income differentiations between origin and destination countries into account in their analyses. In the light of the recent developments at those years, the new econometric form of gravity model has been transformed into;

$$M_{ij} = \ln \beta_0 + \beta_1 \ln D_{ij} + \beta_2 \ln P_i + \ln P_j + \ln Y_i + \ln Y_j + \sum_{n=1}^{m} \beta_{in} \, lnX_{in}$$
$$+ \sum_{n=1}^{m} \beta_{jn} \, lnX_{jn} + e_{ij}$$

In the econometric form, Y_i represents income level of origin country, Y_j represents income level of destination country. X_i and X_j are socio-economic factors such as unemployment rate, policy implications, demographic structures of countries, degree of freedom or urbanization that are the factors of several migration theories as determinants (Greenwood, 2005). The expectations about better economic opportunities by higher wages and lower unemployment rates, safer life conditions

and higher political rights in the destination than in the origin are considered as pull and push factors of migration decision (Ramos, 2016).

The enlargement of gravity models by operating variables of the factors lead to divergence at gravity model of migration from the gravity model of other economic phenomena. For a long time, gravity equations of economic phenomenon are considered to have no theoretical support (Temurov, 2014). Contrary, gravity models of migration have several theoretical backgrounds. Further, gravity model of migration provides opportunity to test validity of several migration theories. Although gravity modeling migration has had theoretical background, the studies on gravity modeling have been at limited numbers. Data limitations on migration delay the use of gravity model of migration. The new global bilateral dataset for international migration flow lead to increase in analyzing of pull and push factors of migration by using gravity models. There is a substantial increase at gravity models of migration during the last decade (Ramos, 2016). Although there is a progress at the specification and estimation of the models, gravity models have its own limitations.

One of the limitations is about the international migration flow. Undoubtedly, there is a progress at bilateral migration data, but country-paired detailed data on migration flow is also required. In addition to detailed data limitation, there are technical difficulties about the zero or negative value of migrant stock for model estimations (Ramos, 2016).

Anderson (2011)'s attempts to gravity models for several economic phenomena lead to progress at gravity models of migration. Anderson (2011) expresses that migration is a discrete choice from a list of locations. Random Utility Maximization (RUM) framework is used and suggested to analysis of migration modeling. RUM compares the utility and expected utility between living in a country and moving to alternative destinations. The utility comparison is based on the expected benefits, which are factors that lead to increase attractiveness of the destination, and costs of migration (Ramos, 2016). A more detailed description of

RUM is explained at Marchal and Naiditch (2015)'s study in micro-funded analysis as follows;

> *"...an individual selects his destination country in order to maximize his utility net of bilateral migration cost across all potential destinations, including his home country. The number of potential destinations is the same across individuals from the same source country and includes any country open to immigration from that country"* (Marchal, Léa; Naiditch, 2016, p. 4).

V.3. DATA SOURCES

In In this study, several types of macro level variables such as demographic, economic, geographic variables, development indicators and policy instruments were included in the gravity models. Different data sources were used in the study due to the absence of detailed data sources on combined demographic and economic variables. As a result, different datasets were evaluated for each variable group. Variables were obtained from several datasets for the 1960-2010 period.

International migration has several implications on socio-economic structures of societies such as economic, social and political implications. Although international migration has been a multi-dimensional phenomenon, there have been a limited number of empirical analyses of migration over a long period. On the other hand, there has been a dynamic literature on migration policy and theoretical framework of international migration. The reason for the limited number of studies is the absence of reliable and comparable international migration data (Özden, Parsons, Schiff, & Walmsley, 2011). There are three main international migration databases: United Nations Global Migration datasets (UNGMD), Database on Immigrants in OECD and non-OECD Countries (DIOC) and World Bank Global Bilateral Migration Database. In this study, the dependent variable was generated from the raw materials of World Bank Global Bilateral Migration Database.

The database was constructed as "*a consistent and complete set of origin-destination matrices of international migrant stocks for 1960-2000, disaggregated by gender*" (Özden et al., 2011, p. 14). The database was more comprehensive and comparable than other international migration datasets. For example, UN Global Migration database involves empirical data on international migrants for more than 200 countries and territories in the world. International migrants in UNGMD are evaluated by country of birth and citizenship. Different data sources such as census, population registers and surveys were used in the construction of the dataset, so there is inconsistent enumeration between the tabulations of the same country. In this regard, UN Population Division experts have specified the use of the database with caution. In addition to UNGMD, UN Population Division provides datasets that involve estimates of migrants by age, sex and origin every 5 years between 1990 and 2010. The dataset is based on estimation and its time period is not as comprehensive as the World Bank Global Bilateral Migration Database. The other main databases belong to OECD. OECD dataset includes migration stock data of 34 countries of residence that came from more than 200 origin countries for all individuals aged 15 and over living in these countries (Ramos, 2016). The second dataset of OECD is constituted for immigrants in OECD member countries and non-OECD countries that cover 100 destination countries. The dataset includes information on age, gender, educational level and place of birth for 2001, 2006 and 2011 reference years (Dumont, Spielvogel, Gilles, and Sarah Widmaier, 2010). Both OECD and UN datasets on migration do not have consistency or cover a long period as the World Bank dataset does. In this regard, we decided to obtain the migration stock variable from the World Bank Global Bilateral dataset.

On the other hand, World Bank Global Bilateral dataset has some problems in the construction process. We believe that explaining these challenges are essential in order to describe the representativeness of international migration stock which is used as the dependent variable in our study. Özden et al. (2011) expressed that there were several challenges in constructing a global bilateral dataset of immigration. First of all, there is a question of who is classified as migrants. Destination countries use different migrant classifications; sometimes they use place of birth, sometimes

they use citizenship or type of visa that lead to discrepancy in datasets. Typically, citizenship of a foreign country or foreign-born are used as main migrant definitions in destination countries. In the World Bank's matrices, foreign-born people are used because nationality can change but place of birth cannot change easily even if there is a change in the redefinition of the place of citizenship. In addition, foreign-born criterion is more certain than citizenship because citizenship is unclear for some territories of the world or citizenship laws vary across countries. The other challenge is about new international borders. For the period 1960-2010, many new countries emerged and some countries collapsed, so international borders of the countries changed. The last challenge is about omitted or missing data in census or registration systems. In these cases, several statistical methods are used. If sufficient data were not available, propensity measures such as propensity to accept international migrants or to send migrants abroad were calculated. If there was enough data, interpolation was used. Those estimations were checked by different simulations (Özden et al, 2011). The dataset that overcomes various difficulties with these methods is the most comprehensive, consistent and comparable set of data prepared for international migration.

In our study, there were several independent country level variables. We collected these variables under different group titles: demographic indicators, economic indicators, social structure indicators and policy indicators. Different data sources were used to construct datasets that included comparable and reliable variables for these groups. Population size of the countries, fertility rate, their median age, population density, life expectancy, infant mortality rate, annual population change, dependency ratios and potential support ratio were included into different models in order to investigate the effects of demographic indicators on Turkish emigration. Unemployment rate and gross national income (GNI) per capita were used as economic indicators. Annual urbanisation change and education index were considered for social structure. Migration policy was generated as a dummy variable to understand the effect of governmental agreements on Turkish emigration.

Demographic indicators were obtained from World Population Prospects, based on the estimations and projections prepared by the United Nations Economic and Social Affairs Department. The estimations cover the period from 1950 to 2100. Average annual rate change in urban population was used as social structure indicator in our study and was prepared by the same UN department. The indicator was estimated in 2014 using Revision of World Urbanization Prospects which covers the period from 1950 to 2050. Education index was also produced from 1980 to 2015 by the UN. It was calculated as a component of human development index which was prepared by UNDP in order to compare the level of well-being in the countries.

The other major indicator group was economic indicators obtained from the World Bank Database. Two indicators were included: share of unemployment in total labour force and GNI-per capita. World Bank's unemployment dataset was based on key indicators of labour market prepared by International Labor Organization (ILO). GNI-per capita was calculated by the World Bank using national account data files.

One of the dimensions of the decision to migrate is governmental policy. We wanted to control for the effects of government level agreements and actions as a deterrent or incentive. Policy indicator was obtained from DEMIG POLICY that is part of the Determinants of International Migration Project (DEMIG) and is a database about international migration policies. The database tracks the changes in migration policies in 45 countries from World War II to 2014. It is difficult to operationalise migration policy, but the database attempts to operationalise policy content, track changes in policies and investigate the magnitude of migration policies in emigrant countries (Czaika & De Haas, 2013). The database includes policy, target group, target origin, policy tool, policy area, magnitude of legislation and magnitude of change at policy. Migration policy dummy variable in our study was generated from this information.

In addition to these groups of variables, we included geographical variables. Geographical data came from datasets from the French Research Centre for International Economics (CEPII). They provide two datasets about geographical

variables for empirical research. One of the datasets provides country level variables such as coordinates of capital cities, languages spoken in the country and colonial links for 225 countries in the world. The other dataset is described as a dyadic dataset which provides variables valid for a pair of countries such as distance (Mayer & Zignago, 2011). In our study, we used this distance variable in this dataset, but we checked the two datasets in order to scrutinise geographical dependency of Turkey.

Table V. 2. Definition of Variables- 1

Variables	Operationalization and Notation	*Definition*	Data Source
Demographic Variables			
Population Size	• Population Size (ps) • Annual Population Change (pc) • Population Density (pd)	• *Both Sexes. De facto population in a country, area or region as of 1 July of the year indicated.* • *Annual Population Change* • *Population per square Kilometer*	United Nations, Department of Economic and Social Affairs, Population Division (2015). World Population Prospects: The 2015 Revision, custom data acquired via website.
Age Structure	• Median Age (ma) • Total Dependency Ratio (td) • Old-Age Dependency Ratio (od) • Child-Dependency Ratio (cd) • Potential Support Ratio (psr)	• *Age that divides the population in two parts of equal size, that is, there are as many persons with ages above the median as there are with ages below the median. It is expressed as years.* • *Total Dependency Ratio ((Age 0-14 + Age 65+) / Age 15-64). De facto population as of 1 July of the year indicated.* • *Old-Age Dependency Ratio (Age 65+ / Age 15-64) De facto population as of 1 July of the year indicated.* • *Child Dependency Ratio (Age 0-14 / Age 15-64) De facto population as of 1 July of the year indicated.* • *Potential Support Ratio (Age 15-64 / Age 65+) De facto population as of 1 July of the year indicated.*	United Nations, Department of Economic and Social Affairs, Population Division (2015). World Population Prospects: The 2015 Revision, custom data acquired via website.

Table V. 3:. Definition of Variables- 2

Fertility	Total Fertility Rate (tfr)	*The average number of children a hypothetical cohort of women would have at the end of their reproductive period if they were subject during their whole lives to the fertility rates of a given period and if they were not subject to mortality. It is expressed as children per woman.*	United Nations, Department of Economic and Social Affairs, Population Division (2015). World Population Prospects: The 2015 Revision, custom data acquired via website.
Mortality	• Infant Mortality Rate (imr) • Life Expectancy at Birth (e)	• *Probability of dying between birth and exact age 1. It is expressed as average annual deaths per 1,000 births.* • *The average number of years of life expected by a hypothetical cohort of individuals who would be subject during all their lives to the mortality rates of a given period. It is expressed as years.*	United Nations, Department of Economic and Social Affairs, Population Division (2015). World Population Prospects: The 2015 Revision, custom data acquired via website.
Distance	Distance (dis)	*Distances are calculated by the great circle formula, which uses latitudes and longitudes of the capital cities.*	Mayer and Zignago (2011): *"Notes on CEPII's distances measures: The GeoDist database"*. CEPII, Working Paper (25).
Economic Variables			
Unemployment	Unemployment Rate (unem)	*Unemployment refers to the share of the labor force that is without work but available for and seeking employment.*	International Labour Organization, Key Indicators of the Labour Market database. Missing values are calculated by imputation method.
Purchasing Power	GNI per capita (gni)	*GNI per capita (formerly GNP per capita) is the gross national income, converted to U.S. dollars using the World Bank Atlas method, divided by the midyear population. Atlas method is a conversion method. This applies a conversion factor that averages the exchange rate for a given year and the two preceding years, adjusted for differences in rates of inflation between the country, and through 2000, the G-5 countries*	World Bank national accounts data, and OECD National Accounts data files.

Table V. 4: Definition of Variables- 3

Social Variables			
Urbanization	Average Annual Rate Change of Urban Population (u)	*There exists no common global definition of what constitutes an urban settlement. The estimates of the proportion of the population that is urban and the size of urban agglomerations presented in World Urbanization Prospects: The 2014 Revision are based for the most part on national statistics.*	United Nations, Department of Economic and Social Affairs, Population Division (2014). World Urbanization Prospects: The 2014 Revision, custom data acquired via website.
Education	Education Index (edu)	*Calculated using Mean Years of Schooling and Expected Years of Schooling*	http://hdr.undp.org/en/content/education-index and author's own calculations.
Policy Variable	Policy (plc)	*Migration Policy Dummy is obtained from DEMIG excel sheets which includes migration policy changes, target groups, policy tools and magnitudes of the policies.*	DEMIG (2015) DEMIG POLICY, version 1.3, Online Edition. Oxford: International Migration Institute, University of Oxford
Development	Human Development Index (dev)	*The Human Development Index (HDI) is a summary measure of average achievement in key dimensions of human development: a long and healthy life, being knowledgeable and have a decent standard of living. The HDI is the geometric mean of normalized indices for each of the three dimensions.*	http://hdr.undp.org/en/composite/trends and author's own calculation by data imputation method
Dependent Variable: Migrant Stock	Migrant Stock Ratio (mratio)	*Proportion of Turkish Migrant Stock to Destination Country Population*	http://data.worldbank.org/data-catalog/global-bilateral-migration-database

V.4. STUDY VARIABLES and ESTIMATED MODELS

In this chapter, formation of the variables and models to test the hypotheses are described. Models were formed based on conventional push-pull factors. Later on the models which aim to demonstrate the relationship between development and emigration were tested using panel data analysis that covers the period of 6 consecutive decades for 14 countries. Meanwhile, the emigrant stock that resides in the destination country was used in order to generate the dependent variable. According to the values related to emigrant stock, the value could be observed only in 10-year intervals from 1960 to 2010. As a result, although our research covers the years 1960–2010; the time dimension of the panel consists of 6 periods of 10 years. When emigrant stock from Turkey to 14 destination countries was analysed, there were no emigrants between the years of 1960 and 1970 in Spain. In these two time periods, emigrants stock was considered as 1 migrant.

We have conducted some calculations regarding indicators that helped us to form dependent variables. The variables of population change, infant mortality rate, life expectancy at birth and annual rate of change of urban population consisted of 5 year periods. Arithmetic mean was calculated in order to obtain the value at the beginning of each 10-year period from 1960 to 2010. The following formula depicts the calculation method of these variables for the year 1960. This method was used for all periods.

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$$E0_{1960} = \frac{E0_{1955-1960} + E0_{1960-1965}}{2}$$

$$imr_{1960} = \frac{imr_{1955-1960} + imr_{1960-1965}}{2}$$

$$pc_{1960} = \frac{pc_{1955-1960} + pc_{1960-1965}}{2}$$

$$urb_{1960} = \frac{urb_{1955-1960} + urb_{1960-1965}}{2}$$

In the formulas E0, imr, pc and urb explain life expectancy at birth, infant mortality rate, annual population change, annual rate of change of urbanisation respectively.

it is challenging to find economic datasets before 1980. Additionally, we faced the problem of missing data for some variables like GNP per capita (1960), education index (1970-1980) and unemployment rate (1970-1980). In order to overcome the lack of data, multiple imputation method was conducted. Multiple imputation method is an imputation procedure that differs from single imputation. Multiple imputation method creates a set of possible values which includes the uncertainty about the right value for each missing value (Yuan, 2000). Through this method, the data were estimated. Later on, the value of GNP per capita for 1960 was checked online to see its compatibility with the values of imputation calculation and results were satisfying. After completing the missing data of education index, development indices prior to 1980 were calculated as well through the formula below. Development index was a composite index that includes three dimension indices: life expectancy index, education index and income index. These indices were calculated as follows:

$$Index = \frac{actual\ value - minimum\ value}{maximum\ value - minimum\ value}$$

$$Human\ Development\ Index = (I_{life}^{\frac{1}{3}} * I_{education}^{\frac{1}{3}} * I_{income}^{\frac{1}{3}})$$

Policy dummy was created to analyse the stimulating effect of migration policies on emigration in European countries. DEMIG POLICY was used to prepare dummy variables. 6-time periods were examined for migration policies. Less restrictive policies were considered as demanding migration policies. We evaluated labour agreements, loosening family reunification criteria, integration policies and finally

policies focused on the emigrants from Turkey for each time period. We examined migration policies in destination countries for each period and assumed that the dummy variable was "1" for periods when immigration policies existed, and was "0" for periods when no such policies existed. In some periods, both encouraging and reducing migration policies were implemented, and we followed two methods for such periods. If there was any policy aimed at Turkey and this policy encouraged migration, the dummy was "1". If there was no such variable, we set the value for the dummy by checking whether the general tendency of the policies applied at that time promoted migration and whether the policies covered a large majority of immigrants.

After overcoming the lack of data indices, we generated the variables for the model calculations. At this step, there were three distinct possibilities for how to build the model equations. We could use them as they are, in log linear equations or calculate relative ratios from the origin and destination country values. For each of the three possible scenarios, we constructed models. Their compatibility with our econometrics played an essential role for our research in order to check their reliability.

We constructed the following models in order to test the hypotheses. The first groups of models were based on the gravity equation. Gravity model included population size and distance, but we also used other indicators that explain or represent population size such as population density and population change:

$$\text{Model 1:} \quad mratio_{i,t} = \beta_0 + \beta_1 pop_{i,t} + \beta_2 dis_i + \varepsilon_{i,t}$$

The second group of models investigated the direct effects of demographic indicators on international migration with gravity variables. The group included age structure, fertility and mortality:

$$\text{Model 2a:} \quad mratio_{i,t} = \beta_0 + \beta_1 pop_{i,t} + \beta_2 age_{i,t} + \beta_3 dis_i + \varepsilon_{i,t}$$

$$\text{Model 2b:} \quad mratio_{i,t} = \beta_0 + \beta_1 pop_{i,t} + \beta_2 age_{i,t} + \beta_3 dis_{i,t} + \beta_4 tfr_{i,t} + \varepsilon_{i,t}$$

Model 2c: $mratio_{i,t} = \beta_0 + \beta_1 pop_{i,t} + \beta_2 age_{i,t} + \beta_3 dis_i + \beta_5 mort_{i,t} + \varepsilon_{i,t}$

The third model included economic variables in addition to the second group of models in order to test the effects of unemployment and per capita income:

Model 3: $mratio_{i,t} = \beta_0 + \beta_1 pop_{i,t} +$
$\beta_2 age_{i,t} + \beta_3 dis_i + \beta_4 econ_{i,t} + \beta_5 mort_{i,t} + \varepsilon_{i,t}$

The fourth model included social structure of countries to understand the effects of these structures on the international decision to migrate.

Model 4: $mratio_{i,t} = \beta_0 + \beta_1 pop_{i,t} +$
$\beta_2 age_{i,t} + \beta_3 dis_i + \beta_4 econ_{i,t} + \beta_5 mort_{i,t} + \beta_6 educ_{i,t} + \beta_7 urb_{i,t} + \varepsilon_{i,t}$

The other hypothesis was about the effects of policy implementations on international migration. Policy dummy was added to model 5. Furthermore, we added policy dummy to all models in order to investigate policy implementations..

Model 5: $mratio_{i,t} = \beta_0 + \beta_1 pop_{i,t} +$
$\beta_2 age_{i,t} + \beta_3 dis_i + \beta_4 econ_{i,t} + \beta_5 mort_{i,t} + \beta_6 educ_{i,t} + \beta_7 urb_{i,t} + \beta_8 plc_{i,t} + \varepsilon_{i,t}$

The last model was estimated to test the effects of social networks. Adding social network effects into the model introduced a new form of panel data regression known as dynamic panel regression. The transformation at model estimation arises from adding the lag of dependent variable; we used migrant stock ratio to the destination countries as a proxy of social network.

Model 6: $mratio_{i,t} = \beta_0 + \beta_1 pop_{i,t} +$
$\beta_2 age_{i,t} + \beta_3 dis_i + \beta_4 econ_{i,t} + \beta_5 mort_{i,t} +$
$\beta_6 educ_{i,t} + \beta_7 urb_{i,t} + \beta_8 plc_{i,t} + \beta_9 mratio_{i,t-1} + \varepsilon_{i,t}$

Where mratio, pop, age, dis, tfr, econ, mort, educ, urb and plc are respectively proportion of the migrants in destination, population size indicators in destination to origin countries ratio, age structure indicators in destination countries to origin countries ratio, distance, total fertility ratio of destination countries to origin countries, economic indicators in destination countries to origin countries ratio, mortality proxy indicators in destination countries to origin countries ratio, education index in destination countries to origin countries ratio, urbanisation change in destination countries to origin countries and migration policy dummy. Population size indicators included population sizes, population densities and average annual population change. Median ages, total dependency ratios, old-age dependency ratios and potential support ratios were used as representatives of age structure. Unemployment rate and per capita income were used as economic indicators in our models. Life expectancy at birth and infant mortality rates were used as mortality proxies.

All the variables used in the above-mentioned groups were used repeatedly for new models and tested accordingly. When composing a new model, variables were used regarding their ratios, logs and raw values. For each test, diagnostic checks were made and deviations from hypotheses were corrected.

In our study, we decided to use relative ratios from the origin and destination country values for our dependent and independent variables. Most gravity analyses are based on log-linear equation form, but we would encounter a multicollinearity problem if we used the log-linear form due to one origin country in the dataset. To prevent a high-level of multicollinearity, we decided to use ratios. For all models, we tested the unit effect and time effect and the models had a unit effect. Then, we used Hausman test for the decision about using fixed-effect model or random-effect model. The results supported our foresight about random-effect models and we built random-effect models for static panel analyses. Model 6 equation represents our dynamic panel data. We

checked diagnostics to control for the assumptions about error terms in all models and we used adjustment methods for biased models[26].

In addition to conventional gravity models, we constructed models in order to test the hypothesis about development and migration. The non-linear model equations were used to estimate the relationship between development and migration.

$$\text{Model 7.1:} mratio_{i,t} = \beta_0 + \beta_1 rdev_{i,t} + \beta_2 rdev_{i,t}^2 + \beta_3 age_{i,t} + \beta_4 econ_{i,t} + \beta_5 plc_{i,t} + \beta_6 tfr_{i,t} + \varepsilon_{i,t}$$

$$\text{Model 7.2:} mratio_{i,t} = mratio = \beta_0 + \beta_1 rgni_{i,t} + \beta_2 rgni_{i,t}^2 + \beta_3 age_{i,t} + \beta_4 econ_{i,t} + \beta_5 plc_{i,t} + \beta_6 tfr_{i,t} + \varepsilon_{i,t}$$

where rdev and rgni are respectively human development index in destination country to origin country ratio and GNP per capita in destination country to origin country ratio.

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[26] The study covers six-time period and autocorrelation is not controlled because of the short time series, but we check heteroscedasticity and adjustment procedures for models.

CHAPTER VI: FINDINGS

VI.I. GRAVITY MODEL ESTIMATIONS

Table VI.1 shows the descriptive statistics of dependent and independent variables. Specifically, ratio of emigrants, ratio of population size, ratio of population density, ratio of population change, ratio of chil dependency, ratio of old-age dependency, ratio of total dependency, ratio of potential support, ratio of median age, ratio of infant mortality, ratio of life expectancy at birth, ratio of total fertility rate, ratio of urbanization rate, ratio of education index, ratio of unemployment rate, ratio of human development index, policy dummy, distance and square of human development level and their descriptive statistics are summarized in the following table.

Table VI. 1: Summary Descriptive Statistics of Variables, 1960-2010[27]

variable	N	mean	sd	min	max
mratio	84	.0045535	.0069763	2.65e-08	.0339791
rps	84	.5614938	.5984962	.0676393	2.655972
rpd	84	2.530231	2.17403	.1425532	9.4581
rpc	84	.2706548	.1711769	-.0711864	.8101695
rcd	84	.5046935	.075718	.375817	.7027027
rod	84	2.624528	.3370004	1.890411	3.597403
rtd	84	.7607472	.1327733	.5817536	1.072125
rpsr	84	.3873679	.0508683	.2769231	.5255474
rma	84	1.639749	.13141	1.37234	1.893048
rimr	84	.2122669	.1963245	.0697674	.9310345
re	84	1.266059	.1619014	1.069694	1.618256
rtfr	84	.5366547	.1675571	.3297141	.9691827
ru	84	.2893762	.1838209	-.0185185	.7794433
redu	84	2.446304	1.57738	1.2544	6.797043
runem	84	.9335589	.5637828	0	2.552858
rgni	84	5.620919	3.014103	0	16.04348
rdev	84	1.562792	.4398511	0	2.467454
plc	84	.2857143	.4544672	0	1
dis	84	2.276643	.5622911	.776	2.966
devsq	84	2.633485	1.244042	0	6.088329

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[27] Graphics on variables and multicolineraity tests are attached in the Appendix B.

International migration theories and empirical analyses of international migration draw on different econometric methodologies in this thesis in order to estimate the models. The following table shows the estimation results of these different models. In the models, ratios of destination value to origin value for all variables were used, the only exception was distance value. Distance value was divided by 1000 and named "dis" in the models. The other variables in the models were named rps, rpc, rpd, rtd, rod, rpsr, re, rgni, redu, ru that represent the ratios of ps, pc, pd, td, od, psr, e, gni, edu and u in the above table.

In the following table, the results of estimations for the static panel data regression models are reported. First, the traditional gravity model (**Model 1a**) was estimated. The gravity model rationale is based on population size and distance variables. Ratio of population size in destination to population size at origin was very significant and negatively related to the proportion of Turkey-born migrant stock to destination country population. If the population of the destination country increases by 1 unit relative to the population of Turkey, the proportion of Turkey-born immigrants within the destination country's population will decrease by 0.007 units. Although the traditional gravity model is based on population sizes, population density was used instead of population size in the literature. For this reason, we estimated **Model 1b**, which uses the ratio of the population density of the destination country to the population density of Turkey instead of population sizes. Ratio of population densities (rpd) was very significant and negatively related to Turkey-born migrant share population of destination country. If the ratio of population densities increases by 1 unit, the share of Turkish migrant in the population of destination will decrease by 0.002 units.

As explained in the conceptual framework, demographic factors are initiation factors that enable many socio-economic phenomena to change. For this reason, when adding demographic factors to the traditional gravity model, models show how changes in the determinants of migration will occur. **Model 2a, Model 2a1** and **Model 2c** enable

us to see the effect of age structure and mortality level on migration.[28] **Model 2a** and **Model 2a1** included the ratio of the population size (rps), the distance (dis) and the age structure. It was expected that the total dependency ratio will be statistically significant especially due to labour migration. **Model 2a** included total dependency ratios as well as distance and population sizes. According to the model, the ratio of the population size of the destination country to the population size of Turkey and the ratio of the total dependency ratio of the destination country to the total dependency ratio of Turkey had an effect on the change in the Turkey-born migrant stock within the destination country at the significance level of 0.05%. The ratio of emigrant stock in the destination country population will decrease by 0.006 units when the ratio of the destination country to the population of Turkey increases by 1 unit. The total change in dependency ratio will increase the ratio of emigrant stock by 0.009 units. If the old dependency ratio is taken into account instead of the total dependency ratio as in model 2a1, the significance levels of the model predictors changed. Ratio of population size **(Rps)** was very significant and negatively related to migrant stock in population of destination; on the contrary ratio of old-age dependency ratio of destination country to the old age dependency ratio of Turkey **(rod)** was weakly significant and negatively related to migrant stock share in population of destination. **In Model 2c** there was a "re" variable, which was created from the indicator of life expectancy at birth in relation to the level of mortality. According to the model, if the ratio of life expectancy at birth in destination country to life expectancy at birth in Turkey (re) increases by 1 unit, the ratio of Turkey-born emigrant stock in the destination country will decrease by 0.013 units.

Model 3a, Model 3b and **Model 3c** show determinants of migration that include various demographic factors and per capita gross national product. **Model 3a** shows that **rtd** (total dependency ratio) and **rgni** (per capita income) were very

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[28] We have constructed models that use TFR to represent fertility as well as age structure and mortality. But before the results were reported many models were estimated many times with different variable types. As a result of adding fertility to models, it was seen that fertility was insignificant and it disturbs explanatory of models. For this reason, the models with fertility variables have not been explained in the course of reporting of the estimation results. As the unemployment rates were also encountered in the similar situation, the results of the models that included the unemployment rates were also not reported.

significant and positively related to share of migrant stock in population of destination countries. According to **Model 3b**, ratio of life expectancy at birth in destination to origin had a significant negative effect on share of Turkey-born migrant stock in destination country's population. Ratio of destination country's per capita income to origin country was significantly positively related to migrant stock share.

Table VI. 2: Determinants of Emigration from Turkey to European Countries (Random Effect Model)

VARIABLES	(1) Model 1a	(2) model 1b	(3) model 2a	(4) model 2a1	(5) model 2c	(6) model 3a	(7) model 3b	(8) model 3c	(10) model 4a	(11) model 4b	(12) model 4c	(13) model 4d
rps	-0.007***		-0.004**	-0.006***	-0.003	-0.002	-0.002	-0.002	-0.003			
	(0.002)		(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)			
dis	-0.002	-0.002	-0.002	-0.002	-0.002	-0.003	-0.003	-0.003	-0.003	-0.003	-0.003	-0.003
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
rpd		-0.002***										
		(0.000)										
rtd			0.009**				0.011***				0.010	0.012***
			(0.004)				(0.004)				(0.008)	(0.003)
rod				-0.004*								
				(0.002)								
re					- 0.013***		-0.009***	-0.007*	-0.012**	-0.015***	-0.005	
					(0.003)		(0.004)	(0.004)	(0.006)	(0.006)	(0.010)	
rgni						0.001***	0.0004**	0.001***	0.001***	0.001***	0.001**	0.001***
						(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
rpsr								0.023**	0.026**			
								(0.012)	(0.012)			
ru									0.001	0.010**		0.010*
									(0.003)	(0.004)		(0.003)
redu									0.001	0.000	0.000	
									(0.001)	(0.001)	(0.001)	
rpc										-0.009**	-0.004	-0.008**
										(0.004)	(0.003)	(0.004)
Constant	0.012*	0.014**	0.005	0.021**	0.028***	0.001	0.021***	0.009	0.012	0.026***	0.007	0.001
	(0.007)	(0.007)	(0.007)	(0.009)	(0.008)	(0.007)	(0.008)	(0.010)	(0.011)	(0.009)	(0.018)	(0.001)
Observations	84	84	84	84	84	84	84	84	84	84	84	84
Number of iso3_d_code	14	14	14	14	14	14	14	14	14	14	14	14

Standard errors in parentheses

*** p<0.01   ** p<0.05   * p<0,1

Model 3c shows that ratio of life expectancy at birth **(re)** was negatively, ratio of potential support ratio in destination country to potential support ratio of Turkey **(rpsr)** and ratio of per capita income in destination to Turkey **(rgni)** were positively related to migrant stock share. **Model 4a, Model 4b, Model 4c** and **Model 4d** included effects of urbanisation and education. Model 4a included ratio of population size, but the other three models included annual population change ratios instead of population size. The models showed that education did not significantly affect migrant share in population of destination countries. On the other hand, ratio of average annual rate of urbanisation changes in destination to origin **(ru)** had a significantly positive effect on migrant stock share. In addition to urbanisation, **Model 4b, Model 4c** and **Model 4d** showed the negative significant effect of average annual population changes on migrant stock share in destination country's population.

Table VI.3 shows the last static panel data models (Model 5 equation). We assert that the initiation factor of migration was based on changes in demographic factors and migration policies were one of the stimulating factors to increase the migrant stocks in destination countries. We constructed several models to estimate the effects of migration policies (**plc**). Migration policy dummy variable was added into all the above estimated models; the results of the estimations are presented in the table.

Considering the estimation results, surprisingly migration policy dummy did not have a significant effect on migrant stock share in destination country's population. It is discussed that migration policy has stimulated migration flows and stocks and it provides continuation of migration. The results of estimation do not support the hypothesis about migration policy.

In addition to analysing migration policy effect, distance (dis) that is explained as a stimulating factor in the conceptual framework and a main determinant of gravity models had an insignificant negative effect on Turkey-born migrants in destination country. The expectation is that there is a weak effect of distance on emigration to

European countries, since the destination countries are close to each other and the migration cost does not vary at high level.

The diagnostic tests performed for the generated models showed that they deviated from the assumptions of the error term. Tables showing no multicollinearity between variables were included in the Appendix. Brown and Forsythe's (1974) test statistics were used to check for heteroscedasticity. Test statistics showed that all models have heteroscedasticity. White standard errors were used for heteroscedasticity in the models. The results of these models are shown in the Table VI.4. Since the time dimension of the dataset is very short, it is assumed that there will be no autocorrelation problem[29].

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[29] When the graphs of the variables are plotted, it is thought that Germany is outlier and will change the parameters of the model. It is also thought that Spain may have caused deviations in the model due to the fact that there are no migrant stocks for the first three time period. Models were created without Spain and Germany.The results remain robust to their exlusion. It can be regarded as series of robustness test of core model spesification.

Table VI. 3: Determinants of Emigration from Turkey to European Countries- Migration Policy Effect

VARIABLES	(1) model5a	(2) model 5b	(3) model 5c	(4) model 5d	(5) model 5e	(6) model 5f	(7) model 5g	(8) model 5h	(9) model 5i	(14) model 5j	(15) model 5k
rps	-0.002		-0.004**	-0.004**	-0.001	0.001	0.000	-0.001	-0.001		
	(0.002)		(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)		
rtd	0.012***					0.012	0.011***			0.007	0.008
	(0.005)					(0.013)	(0.004)			(0.008)	(0.008)
dis	-0.003	-0.002	-0.002	-0.002	-0.002	-0.003*	-0.004*	-0.003	-0.003	-0.003	-0.003
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
plc	0.001	0.001	0.001	0.001	-0.000	-0.001	-0.001	-0.002	-0.001	-0.001	-0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
rpd		-0.001***									
		(0.000)									
rod			-0.004*								
			(0.002)								
rpsr				0.021					0.016		
				(0.015)					(0.013)		
re						-0.015***	-0.005	-0.010***	-0.008**	-0.006	-0.005
						(0.003)	(0.007)	(0.004)	(0.004)	(0.011)	(0.011)
rtfr							-0.005				
							(0.008)				
rgni						0.001**	0.001***	0.001**	0.001***	0.001***	0.001**
						(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
runem							-0.000				
							(0.001)				
ru										0.007	
										(0.005)	
redu										0.000	0.000
										(0.001)	(0.001)
rpc										-0.008**	-0.004
										(0.004)	(0.003)
Constant	0.002	0.013**	0.021***	0.003	0.029***	0.008	-0.000	0.021***	0.013	0.010	0.008
	(0.006)	(0.005)	(0.008)	(0.008)	(0.006)	(0.016)	(0.006)	(0.007)	(0.009)	(0.018)	(0.018)
Observations	84	84	84	84	84	84	84	84	84	84	84
Number of iso3_d_code	14	14	14	14	14	14	14	14	14	14	14

Table VI. 4: Determinants of Turkish Migration to European Countries, 1960-2010 (Random Effect Models)- Robustness

VARIABLES	(1) Model 1a	(2) Model 1b	(3) Model 2a	(4) Model 2a1	(5) Model 2c	(6) Model 3a	(7) Model 3b	(8) Model 3c	(10) Model 4a	(11) Model 4b	(12) Model 4c	(13) Model 4d
rps	-0.007***		-0.004**	-0.006**	-0.003	-0.002	-0.002	-0.002	-0.003			
	(0.002)		(0.002)	(0.002)	(0.003)	(0.002)	(0.003)	(0.003)	(0.003)			
dis	-0.002	-0.002	-0.002	-0.002	-0.002	-0.003	-0.003	-0.003	-0.003	-0.003	-0.003	-0.003
	(0.003)	(0.004)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.002)
rpd		-0.002***										
		(0.001)										
rtd			0.009***			0.011***					0.010	0.012**
			(0.003)			(0.004)					(0.012)	(0.005)
rod				-0.004								
				(0.002)								
re					-0.013***		-0.009***	-0.007**	-0.012***	-0.015**	-0.005	
					(0.004)		(0.004)	(0.003)	(0.004)	(0.006)	(0.012)	
rgni						0.001***	0.000**	0.001***	0.001***	0.001***	0.001**	0.001***
						(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
rpsr								0.023*	0.026*			
								(0.013)	(0.014)			
ru									0.001	0.010***		0.008***
									(0.004)	(0.003)		(0.003)
redu									0.001**	0.000	0.000	
									(0.000)	(0.000)	(0.000)	
rpc										-0.009	-0.004	-0.008
										(0.006)	(0.006)	(0.006)
Constant	0.012	0.014	0.005	0.021*	0.028**	0.001	0.021**	0.009	0.012	0.026*	0.007	0.001
	(0.008)	(0.009)	(0.007)	(0.012)	(0.012)	(0.006)	(0.011)	(0.012)	(0.012)	(0.014)	(0.022)	(0.006)
Observations	84	84	84	84	84	84	84	84	84	84	84	84
Number of iso3_d_code	14	14	14	14	14	14	14	14	14	14	14	14

obust standard errors in arentheses   *** p<0.01, ** p<0.05, * p<0.1

As seen in the table, there were no significant changes in many models. Standard error values in the Table VI.2 were different from those in the Table VI.4, but there were no large variations in the coefficients. Compared to Table VI.2 and Table VI.4, the ratio of the old dependency ratio in the destination country to the old dependency ratio in Turkey (rod) in the model 2a1 lost significance. As seen in the Table VI.2 the rpd variable had a level of significance of 0.1.

Similarly, the variable rpc for the average annual population change rate in **Model 4b** and **Model 4d** was significant in the Table VI.2, whereas the Table VI.4 shows that that it was no longer significant. In **Model 4a,** the variable indicating the ratio of education index was significant. No changes were observed except for these changes in the models. According to **Model 4d**, factors determining the share of Turkey-born in the destination country population were the total dependency ratio, the rate of urbanisation and the national income per capita.

These five equations represent static panel data models in this thesis; in addition to the static panel data analyses, the literature and conceptual framework suggest estimating models using dynamic panel data regression. The reason behind the suggestion is the assertion about effects of social networks on international migrant stock. The effect of social network was added into models by lag of Turkey-born migrant stock share in destination country's population. Adding the lag of the dependent variable leads to a change in the type of the model and dynamic panel data were used for model specification. The following table (Table VI.5) shows the last model equation **(Model 6)** results for dynamic conventional gravity models. Many factors were used for model specification. Model 4d was used as the core model which explains the Turkish migration determinants. In the first table of models, population change, national income per capita, urbanisation and total dependency ratios were the main determinants for emigration from Turkey to European countries between 1960 and 2010. If the robustness estimators were used, the main determinants were total dependency ratios, per capita national income and urbanisation. In this regard, we constructed several models based

on generalised method of moments (GMM). These models have difficulties in instrument variables. In addition to valid instrument variable problems, we think that the last model of the static panel is the basic model which explains the determinants of emigration from Turkey between 1960 and 2010. The GMM showed that Turkish migration was strongly positively related to previous migrant stock's share in the population of European countries. If social network effect is increased by 1 unit, the share of Turkish emigrants increases 0.033. If the ratio of the population change in the destination European country to the population change in Turkey increases by 1 unit, the share of emigrant stock will decrease by 0.009 units. The effect of per capita national income will not make a large positive change in emigrant stock, even if it is significant on the emigrant stock at the level of significance of 10%.

Table VI. 5: Determinants of Emigration from Turkey to European Countries, 1960-2010 (GMM)[30]

VARIABLES	(1) GMM
L.mratio	1.0329***
	(0.061)
rpc	-0.0091*
	(0.005)
rtd	0.0026
	(0.002)
rgni	0.0002*
	(0.000)
Observations	70
Number of country	14

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

VI.2. DEVELOPMENT AND INTERNATIONAL MIGRATION RELATIONSHIP

Conventional gravity models assert a linear relationship between international migration and its determinants. On the other hand, we know that there is a linkage between development level and international migration. In our study, an increase in relative level of development in Turkey is expected to lead to emigration. Nevertheless, our results have shown that the linkage is not linear, but an inverted U-curve. Thus Turkish migration to European countries first will increase, then it will decrease if Turkey continues to develop.

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[30] System dynamic GMM model included AR(1): 0.043, AR(2): 0.115. Arellano-Bond test for AR (2) in first differences showed autocorrelation, which is a required condition of the model. Sargan tests and Hansen tests provided valid instrument variables in model estimation. In the model, robust standard errors were used.

It is difficult to measure development. Neo-classical economists consider that development is related to economic progress and they generally use GDP per capita as a proxy of development level. On the other hand, development is a transformation process that impacts different facets of societies. UNDP has obtained and calculated human development index in order to take the multi-dimensional structure into account. In our study, we used human development index and GNI per capita to operationalise development. We generated the ratio of destination country's human development index to Turkey's human development index. The same was repeated for GNI per capita.

The following table shows the results of estimated models. According to the table, the results of the estimation models supported our hypothesis. We estimated four models by using human development index and three models using GNI per capita. The four models revealed the inverted U-shape curve relationship between development level of Turkey and Turkish migration to European countries. **Model 7a**, **Model 7c**, **Model 7e** and **Model 7g** showed a strong significant relationship between ratio of destination country's development level to Turkey's development level and migrant stock share in destination country's population. **Model 7b and Model 7d** provided the similar results for GNI per capita. In **Model 7b**, ratio of total fertility rate in destination country to total fertility rate in Turkey (**rtfr**) was very significant and positively related to migrant stock share.

Table VI. 6: Development Effect on Emigration from Turkey to European Countries

VARIABLES	(1) model 7a	(2) model 7b	(3) model 7c	(4) model 7d	(5) model 7e	(6) model 7f	(7) model 7g
rdev	0.019***		0.019***		0.017***		0.016***
	(0.003)		(0.003)		(0.004)		(0.004)
devsq	-0.007***		-0.007***		-0.006***		-0.006***
	(0.001)		(0.001)		(0.001)		(0.001)
rtfr	0.004	0.007***					
	(0.003)	(0.003)					
rgni		0.002***		0.002***		0.002***	
		(0.000)		(0.001)		(0.001)	
gnisq		-0.000**		-0.000***		-0.000	
		(0.000)		(0.000)		(0.000)	
rpc			-0.002	-0.001	-0.004	-0.004	-0.004
			(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
plc					-0.000	-0.001	0.000
					(0.001)	(0.001)	(0.001)
rtd					0.007	0.010***	0.008
					(0.005)	(0.004)	(0.005)
runem							-0.001
							(0.001)
Constant	-0.009***	-0.007***	-0.006**	-0.003	-0.010**	-0.008***	-0.010**
	(0.003)	(0.002)	(0.003)	(0.002)	(0.004)	(0.003)	(0.005)
Observations	84	84	84	84	84	84	84
Number of iso3_d_code	14	14	14	14	14	14	14

VI.2. AN ASSESMENT ON FINDINGS

While studying the determinants of migration, two major theoretical approaches were considered in the study. In the first approach, the theoretical perspective claimed that the orthodox point of view is dominant, that there are several socio-economic indicators of countries, and that there is a linear relationship between migration and socio-economic migration. The second approach is a theoretical perspective that suggests that the relationship between many factors related to societies is more complex and multidimensional. This approach involves a critical viewpoint as well as taking place within the orthodox point of view. The same econometric models and equations were not used as methods since they involved two different theoretical perspectives. Basically, two different model groups were obtained. The first group of models was developed from the assumptions of the gravity model, based on conceptual frameworks and based on the factors that the emigration experience in Turkey put forward. The second set of models used the quadratic form to reveal the complex structure of the relationship between development and migration.

In the study, two different econometric methods were used methodologically in the part where the gravity models were developed. Migration literature and Turkey's experience have shown the importance and analysis of social network theory. For this reason, both the static and dynamic panels were modelled, the random effect model was used for the static panel, and GMM was used for the dynamic panel. Since origin country was only focused on Turkey, encountering a multicollinearity problem is possible. This method, which we have applied to prevent a methodological problem, is the theoretically suggested approach. The use of relative variables is also compatible with the proposals of the new economics theory of labour migration. Additionally, De Haas (2010) asserted that the 'relative' level of development in an origin country to other development level in destination country is one of the determinants of migration.

He also emphasised that this kind of approach fits into the consideration on the relative, not absolute deprivation as one of the main determinants of migration and it is especially suggested in new economics of labour migration. In this context, we follow the same consideration by investigating relative effects of many factors in the analysis. Therefore, instead of the absolute values of the countries, relative values of many factors are used.

In the study, we tried to explain emigration from Turkey to European countries by including several variable models gradually for the static panel. We suggest that demographic factors are initial factors and affect social economic factors. We tried to explain population size, distance and migration first because of this argument and the proposals of the gravity model. We then estimated the model by adding other factors. The hypotheses I proposed in the study and assessment on the findings are as follows:

We asserted that the increase in the population of the destination country would increase the emigrant stock going from Turkey and the increase in the population in Turkey will have a similar effect. We tested this hypothesis using not only the population size, but also population density or population change in different models. According to the created models, the proportion of Turkey-born immigrants living in European countries to the population of the destination will decrease if the population of destination European countries increases with respect to Turkey. The same applies to the annual rate of population change. If the population changes of destination countries increase compared to Turkey, the ratio of Turkey-born immigrants to the population of the destination country will decrease. Therefore, the direct proportion effect of population sizes, which is the basic proposal of gravity, does not apply to Turkey. Although this result is contradictory to the gravity model, Ramos and Suriñach (2013) and Bucevska (2010) have shown that the increase in the number of destination countries reduces the emigrant stock.

The proposal that the distinction between the countries, which is the other proposal of the gravity model, will influence the emigration decline was not statistically

significant in any model established for Turkey. Therefore, the basic proposals of the gravity model do not explain the tendency to migrate from Turkey to European countries.

In addition to population size, we have estimated models that test whether demographic indicators of emigration are determinative for migration. Migration from Turkey to European countries began massively in the 1960s with labour agreements, so labour migration after 1960 became important for Turkey. Because of the tendency of younger people to migrate and because of the importance of migration from Turkey to labour migration after 1960, we think the age structure of countries should be included in the analyses. For this reason, we included indicators such as total dependency ratio, old-age dependency ratio, and potential support rate to represent age structure of Turkey and destination. Econometric models have shown that increasing the total dependency ratio of destination countries relative to Turkey creates a strictly positive effect on migrants' stock. Although no theory explicitly argues that age structure is necessarily one of the determinants of the decision to emigrate, there are many studies that incorporate age structure as a determinant of international migration analysis (M. Beine & Parsons, 2015; Bertocchi & Strozzi, 2008; Clarke & Eyal, 2013; DeWaard et al., 2012; Kim & Cohen, 2010; Mayda, 2010). These studies have shown that countries with younger age groups tend to migrate more and that increases in dependency ratios in the destination country will attract more migrants. For example, Kim and Cohen (2010) analysed the effects of potential support rate and found that that a young population of host society resulted in a decline of immigrants by 11% and young population of source country raised emigrants by 8.2%. In agreement with these studies, we found a strong significant effect of the total dependency ratio on the share of migrants from Turkey to European countries within the population of the destination country..

Life expectancy at birth was included in the model as a proxy of the quality of life and was also analysed by Kim and Cohen (2010) and Czaika et al. (2016). The destination country is expected to attract more migrants when there is improvement in

the expectation of life at birth, but the effect in the models is counterintuitive. It is statistically significant in all the models in which life expectancy is included, but the share of immigrants declines when the destination country's life expectancy at birth increases compared to Turkey. Although Kim and Cohen (2010) described this situation as a methodological problem, in the models that we have developed, the diagnostic checks have shown that there are no such problems. We think that the counterintuitive result is a puzzle and it may arise from the non-linearity between life expectancy at birth and migration. If life expectancy is considered as a proxy of life quality like development, non-linearity will be the answer to this counterintuitive result.

Models with total fertility rate and models with infant mortality rate showed the insignificant effect of these factors on international migration for Turkey between 1960 and 2010. In this regard, these models are not shown in the tables above.

Many migration theories and migration literature indicate that per capita income is the main determinant of migration. In this study, the expectation was that a rise in the GDP per capita in destination country relative to GDP per capita in Turkey would attract more Turkey-born migrants to their countries. The models showed that a significant effect of GDP per capita in destination country relative to Turkey on share of Turkey-born emigrants in destination country's population. This result was found in both the model of attraction and for the economic theories of migration. Other empirical works also found this effect (Brücker & Schröder, 2012; Bucevska, 2010; Clarke & Eyal, 2013; Fagiolo & Santoni, 2015; Feridun, 2007; Mayda, 2010; Moral-Pajares & Jiménez-Jiménez, 2014; Ramos & Suriñach, 2013; Ruyssen et al., 2012; Ruyssen & Rayp, 2014). The Turkish case is also in accord with the results of these studies.

The increase in the unemployment rate of the destination country relative to the unemployment rate of Turkey was expected to reduce the share of emigrants in the population of the European country. This indicator was insignificant when added to models. The finding also fits with the result of Mayda's (2010) analysis. She explained

the possible reason for non-significance and emphasised the effect of asymmetry. In line with Mayda's consideration, the insignificant effect of relative unemployment rate for Turkey may arise from asymmetry between young age group and old age group or low-skilled workers and high-skilled workers. The effect of one group may dominate the effect of other group and it may lead to insignificant results for relative unemployment rate. As a consequence of insignificance, the findings on unemployment rate are not shown in the tables above.

In addition to these models, social factors were added to the models. An increase in the education level or the increase of education difference between the two countries was expected to have a positive effect on the emigrant stock, but this effect was not seen for Turkey. This was inconsistent with the human capital migration model that Sjaasted (1962) described in his work. Turkish emigrants migrate in the direction of the demands of secondary labour markets, driven by low-skilled jobs in destination countries much like Filipino immigrants who were studied by Agbola and Acupan (2010). For this reason, it is possible that the increase in education level is not significant on emigration.

The effect of urbanisation on emigration is positive, like the other social factor of education level (DeWaard et al., 2012; Kim & Cohen, 2010). The pioneers of emigration and development theories such as Lewis (1940) and Harris and Todaro (1970) have stated that increasing urbanisation rates will have an impact on emigrant stocks. In this study, an increase in the relative level of the urbanisation rate of the destination in Europe to Turkey's urbanisation level increased the share of Turkish migrant in the population of destination country. As mentioned earlier, the relationship between migration and urbanisation is based mainly on the transformation of the society from agricultural-based production to industrialised production. The transformation from the traditional sector to modern industrialised sector leads to migration of rural workers to urban centres in the country. In the next stage, wages of urban workers show a downward trend and it pushes workers to migrate abroad (Maurel & Tuccio, 2016).

When it comes to Turkey, urbanisation started in the 1950s and it increased rapidly, and from time to time it is possible that the pattern of rural to urban migration was transformed to international migration.

Model 4d using the static panel set out the main determinants of Turkey's migration movements, taking into account the factors in the conceptual framework. According to this model, the tendency to migrate from Turkey to European countries between 1960 and 2010 was mainly determined by relative urbanisation rate, relative total dependency ratio and per capita income level in Europe and Turkey. The directions of these determinants were positive, negative and positive, respectively.

On the other hand, there was no statistically significant effect of the migration policy dummy variable, which explored the effect of labour agreements that initiated mass migration. Based on studies by Czaika and De Haas (2011), migration policies have limited significant effect on migration compared to other determinants. In a revision of their study, they explained this in detail as follows:

> *"....the effects of migration policies on immigration are existent, but relatively small compared to other social, economic and political determinants, which may confound (intended) migration policy efficacy. In particular, 'non-migration policies' such as macro-economic, labour market, social welfare, education, aid and trade policies might often play a much bigger role than 'typical' migration policies."* (Czaika & De Haas, 2013, p. 20).

From a similar point of view, one conceptual framework states that immigration policies are not the main determinant for Turkey but will have a stimulating effect on migration. Although the Turkish experience shows that theoretically immigration policies will be effective, econometric analyses have shown that such an effect is statistically insignificant.

The hypothesis regarding the social network is the most important of the social factors and the methodology that leads the model to change. The hypothesis suggests that past migrations will lead to future migrations. The model was tested using GMM and revealed that social network has a strong influence on migrating to European countries.

Massey et al. (1990) emphasised that emigration is self-reinforcing. Theoretically, those who analyse this argument provide evidence for the positive effects of social networking on the migration stocks or flows (M. Beine & Parsons, 2015; M. Beine et al., 2014; M. Beine & Salomone, 2013; Clarke & Eyal, 2013; Czaika & Parsons, 2015; Fagiolo & Santoni, 2015; Gross & Schmitt, 2012; Mayda, 2010; Ruyssen et al., 2012; Ruyssen & Rayp, 2014). This study also revealed that in the models using GMM, social network did promote the tendency to migrate after migration started. The social network reduces costs and risks and the new emigration movements are encouraged; the emigrants become the main determinants which feed the migration movement after a while.

On the other hand, Turkey has been in a development process between 1960-2010. From the 1960s, the characteristics of underdeveloped countries were seen, but by the year 2010, it became a high-middle developed country. This transformation in the development process also impacted the migration pattern. The relationship between Turkey's development level and migration tendency is non-linear and multidimensional. Due to this structure, Turkey will gradually transform into a country that receives immigration. The study revealed that as the level of development of European countries increases relative to Turkey, European countries will become more attractive to Turkey-born migrants and then decrease. In this study, many models were constructed and analysed to explore the relationship between Turkey's development level and migration pattern. Analyses for both the emigration rate and the emigration stock did not reveal a significant statistical relation. Likewise, the model with economic, social, demographic and developmental factors of Turkey relative to the destination country did not reveal

this relation. As mentioned above, only the existence of an inverted U-shaped relationship between the level of development of destination and migrant stock can be explained. Therefore, the level of development of European countries, rather than the level of development of Turkey, was influential on the migration pattern of Turkey. Attractiveness of the destination countries was related to developmental levels and was in accordance with the mobility transition hypotheses proposed by Zelinsky (1971).

CHAPTER VII: CONCLUSION

The main purpose of this thesis was to analyze the determinants of migration from Turkey to European countries between the years of 1960-2010 by using panel data regression analysis. This study, which has not been done before in the context of Turkey with the above mentioned method, explored the emigration in a demographic and macro-economic perspective by using various econometric models. We specifically analyzed (i) the determinants of the emigration at the initiation of the population movement in the 1960s, (ii) the self-perpetuating determinants of the emigration, (iii) the role of the development levels of both Turkey as an origin country, and of the destination countries on the emigration from Turkey. Furthermore, (i) developing a new conceptual framework on the determinants of migration and (ii) explaining the emigration from Turkey as classified into periods and examined by migration theories have also been aimed in the study.

Following the development of the intervening opportunities approach of Stouffer (1940) pull and push factors has formed the backdrop for many migration platforms, and this approach was often used. With the theory of migration systems, complex and multidimensional configuration of immigration has become clear, and in 1990s, the approach that formed the background of immigration theories has been changed completely. In 2004, Jennisen developed a new theoretical framework on international migration that included various indicators on economy, society, policy and culture and he showed the direct, reverse and indirect linkages between these structures and international migration. We, likewise, developed a new conceptual framework, which covered three groups of factors; namely demographic, economic and social factors groups. We asserted that demographic factor group is the initiation factor group that had direct and indirect effects on international migration while the other two factor groups had only direct effect on international migration. As it was explained in the

conceptual framework, demographic factors had direct effect on economic and social factor groups leading either to increase or decrease in these groups. Emigrant stock was indirectly influenced from the changes and the process is called indirect effect of demographic factors on international migration. The framework also included a stimulating factor group, which encompassed distance, historical relationship between origin and destination, common language, common border and migration policies. To handle emigration within a conceptual framework that considers a multi-structural line through which a more coherent definition and structure is reflected, appears to be more suitable for today's international migration

As regards with the second purpose of the thesis, we explained emigration from Turkey to European countries under two periods; (i) the period of 1960-1980 and (ii) the period of 1980-2010. When the socio-economic structure of Turkey in that period was examined, it was seen that emigration from Turkey to European countries was explained with economic-based migration theories. Specifically, dual labor market theory and new economics of migration theory were the two most frequently referred theories in explaining the emigration of that period. The propositions of these theories corresponded to the socio-economic and demographic conditions of that time. After 1980s, construction of migration networks in destination and as well as family reunification policies as stimulating factors lead to a change in migration theories. Thus, for that period it was the social network theory that explained emigration from Turkey to European countries. Migrants, who migrated European countries in 1960s and 1970s, facilitated the potential migrants' migration decision. As to our findings, the emigrant stock in destination provided sheltering, job opportunities and information about the social life at the destination to potential migrants. Thus, the emigrant stock played an accelerating role in the attractiveness of destination countries.

Additionally, in the period between the years of 1960-2010, economic, social and demographic indicators of Turkey referred to a transformation in development level of the country. In those years, *"More specifically, based on current trends in its major*

demographic parameters, Turkey is about to reach the final stage of a first demographic transition, one in which fertility and mortality decline, life expectancy increases and the population age structure changes profoundly"(Ergöçmen, 2012, p. 117). Besides the demographic transition of Turkey, GNP per capita in the country had improved and it had increased from 507 USD in 1960 to 9950 USD in 2010. Meanwhile, human development index improved increase from 0.237 to 0.717. Most of the indicators showed the transformation in the development level of Turkey for this period. Progressive transformation of the country led to a change in the longstanding emigration pattern. In this period, Turkey has experienced the stages of mobility transition proposed by Zelinsky (1971).

Additional to these theoretical explanations, the analyses based on conceptual framework showed the determinants of emigration from Turkey to European countries. Findings indicated that the main determinants in the first stage of the migration system formed by the agreement of labor recruitment with European countries were total dependency ratio, GNP per capita and urbanization rate. However, after the beginning of migration and reaching a threshold level, migration appears to be a self-perpetuating system. The results of the dynamic panel revealed that those who had migrated a while ago were the most significant determinant of the Turkey-European migration corridor. Migration network was the determinant with the strongest impact, besides the impact of per capita national income and population change.

The model for the development and migration relationship in the study showed that the difference between the level of development in Turkey and the level of development in European countries does not have a linear effect on the emigrant stock. The difference between Turkey's development level and the destination country's development level would increase the migration up to a certain level, and if the difference continued to increase, the migration would decrease. The findings revealed that the emigrant stock was very much related to the development level of destination countries but not to that of Turkey. Although Turkey has shown significant progress in

its development level between 1960 and 2010, European countries in the meanwhile have increased their already high level development indicators and have begun to show features of the advanced society stage, which is in accordance with Zelinsky's (1971) hypotheses. Thus, while the level of relative development between Turkey and European countries in the 1960s was at a high level, over time this relative disparity decreased due to Turkey's rapid development process.

Additionally, the effects of immigration policies and distance on immigration to European countries were examined as factors that would have impact on the emigration. In our study, those factors were categorized in stimulating factor groups. We asserted that (i) those factors have smaller impact on international migration compared to other factor groups, which were called as determinants, or (ii) these stimulating factors had no impact.

Both distance and immigration policies can actually be considered as two factors related to making migration easier or more difficult. That was, an increase in the distance between the two countries was expected to rise transportation costs and reduce the propensity to migrate. This was especially true for studies that examine international migration movements seen in the early 20th century. However, the effect of distance was not expected to be as strong as it was in the past periods since transportation has become easier and migration costs have been reduced over time. Moreover, since the focus of this study was on the 14 European countries of which the distances to Turkey did not vary much, the impact of distance was not expected to be effective on the emigration. The results of the study were in accordance with our expectation and the econometric analyzes revealed that there was no effect of distance on decision to migrate to European countries. On the other hand, a similar study focusing on the OECD countries revealed that distance had a statistically significant effect on migration decisions. When distant countries such as the United States and Canada were among the destination countries, the effect of distance becomes statistically significant.

Besides the distance factor, migration policies also either facilitate or make the propensity to migrate difficult. Although migration policy was classified as a stimulating factor in this study, it was expected that the migration policy would have statistically positive effect on Turkish emigration to European countries. The main reason for this expectation was the increase in labor migration in the 1960s as a result of European countries adopting promoting migration policies, labor recruitments and labor demands. The study examined the migration and integration policies and regulations implemented by 14 European countries from 1960 to 2010, and the immigration-boosting policies affecting Turkey were included in the analyses as dummy variables. When the immigration policies of European countries are examined, it is not possible to mention the linear and permanent immigration policies. Migration policies have been constantly changed and revised according to the social, political, and mostly economic conditions of the current period. In the 1960s, it is seen that when a migration promoting policy was implemented, restrictive migration policies began to be implemented in the following period, or within the same period, restrictive migration policies have been implemented for certain groups on the other hand, migration promoting policies were implemented for other groups.

In terms of immigration policies, the 1960s have been years of labor agreements. Many European countries import labor from both Southern Europe and developing countries, due to the unskilled labor requirement to work in the second labor market. Germany, for example, has signed a labor agreement not only with Turkey but also with many other countries; Greece in 1960, Turkey in 1961, Morocco in 1963, Portugal in 1964, Tunisia in 1965, Yugoslavia in 1968. In the 1960s, other European countries, like Germany, signed a labor agreement with similar countries. As a result of labor migration, it is observed that in the 1970s, the integration programs started to be implemented, but on the other hand, various arrangements were made, such as working and residence permits. In the 1970s, it was seen that there was a reduction and a restriction in the policy of promoting immigration of the previous period. For example, in 1974, labor force recruitment was halted in Belgium. *"Decision of August 1, 1974 to*

halt immigration - officially stopped any new immigration, but still allowed entry for people with qualifications were not already available in the country" (DEMIG, 2015). In the 1980s, family reunification programs have been extensively implemented in almost all countries. Due to family reunifications, migration networks and refugees, the increase of migrants' movement has led to the implementation of many immigrant-restrictive policies. In particular, immigrants have become a political means of propaganda and strict immigration policies have been implemented in migrants' work, residence and entry to the country. In Austria, *"the extreme right starts politicizing immigration in the public sphere"* (DEMIG,2015). In the 1990s, migration policies are less restrictive as a result of the war in Europe and the Soviet's liquidation. It is a period in which immigration policies are more encouraging than in previous periods, in which certain countries are excluded from various restrictions, as a result of labor contracts made in the 1960s, in which working conditions for refugees are regulated. The 2000s are times when immigration policies are more restrictive. For example, in 2003, DNA testing for family reunification has been used by many European countries for years, and the application to citizenship in many countries has become possible with special integration and language tests such as in the UK. The UK introduced a new test "*proving that they have a knowledge and understanding of United Kingdom society"*. Most of the European countries began to implement such tests for citizenship applications.

Policies that promote immigration seen in the 1960s seem to be much more restrictive over time. In our study, migration policies do not reveal a statistically significant relationship to emigration from Turkey to European countries. This effect may not be seen due to the dominance of the restrictive migration policies implemented after the 1960s.

In short, this study contributed to the theoretical explanations mentioned above, as well as the macro level determinants of emigration from Turkey to European countries. From the results of this study, it is possible to design many future studies at

various levels and purposes. Migration projections that will be developed based on the determinants indicated in this study will estimate the potential number of emigrants to guide the evidence-based migration policies. In other words, GNP per capita, population change, total dependency ratio and changes in urban population in destination country and in Turkey are included into as the ingredients of the projections, potential emigrants from Turkey will be presented under various scenarios. In addition to such a study, different econometric models and estimators and the handling of migration decisions with micro-level variables will enable us to make the migration determinants more comprehensive. Since the migrant stock data covers a long period of time, 10 years, it becomes difficult to see the variations and fluctuations in the meantime. Using migrant flow data instead of migrant stock provides detailed information. Estimating migration flow data for 1960-2010 period would enable to analyze the micro-economic aspects of emigration by using new models such as random utility model (RUM) and PPML estimator. An approach based on utility maximization enables to understand the prospective migrant's calculation on the value of the opportunity at each alternative destination relative to the value of the opportunity at the origin by considering costs of migration.

Turkey is considered among the labor reserve of European labor market with North African countries (Castles, 2008), so analyzing Turkey together with these labor reservoir countries of the above mentioned region may provide a comprehensive understanding of emigration pattern of Turkey, and may help to show the disparities in the determinants of emigration between each origin country. Alternatively, an analysis on demographic transitions, development levels and migration patterns of Mediterranean countries will reveal whether Turkey's migration pattern is compatible with the Mediterranean Migration Model, or not.

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APPENDIX A: DEMOGRAPHIC STRUCTURE AND MIGRATION POLICIES

IN EUROPEAN COUNTRIES

Figure A 1: Age Structure Changes in Belgium; 1960-2010[31]
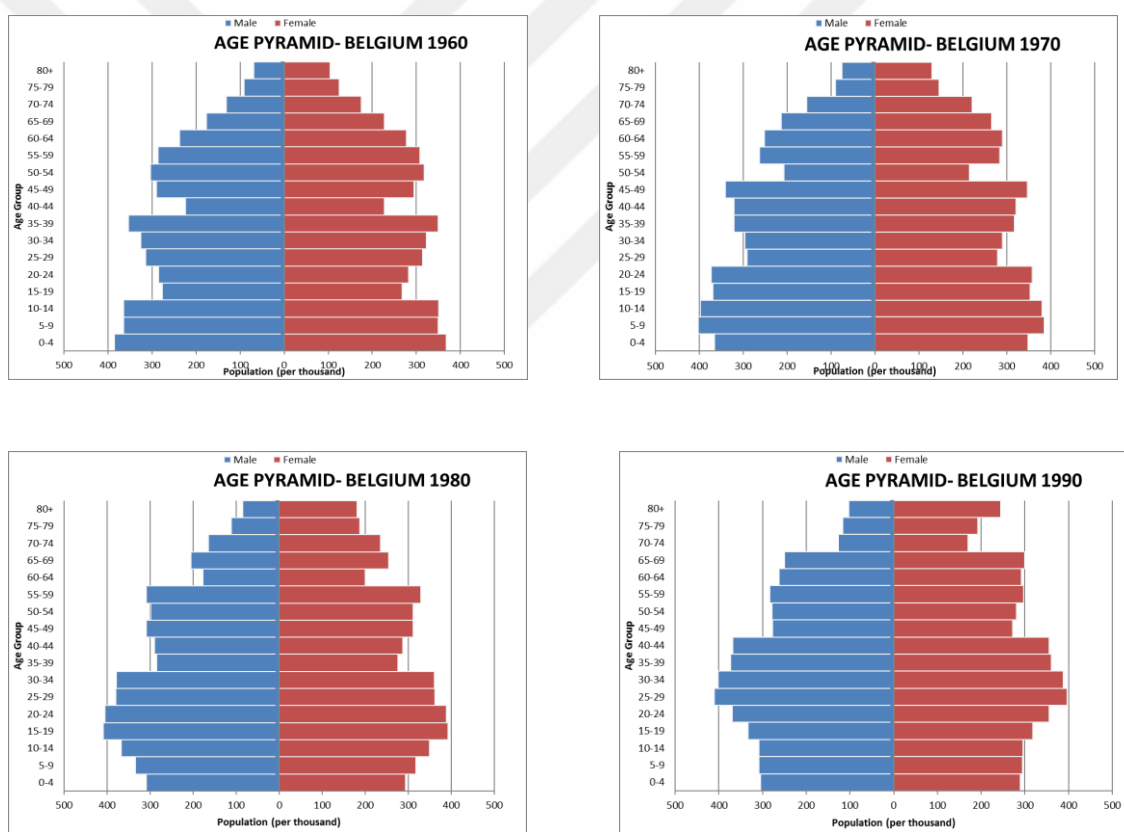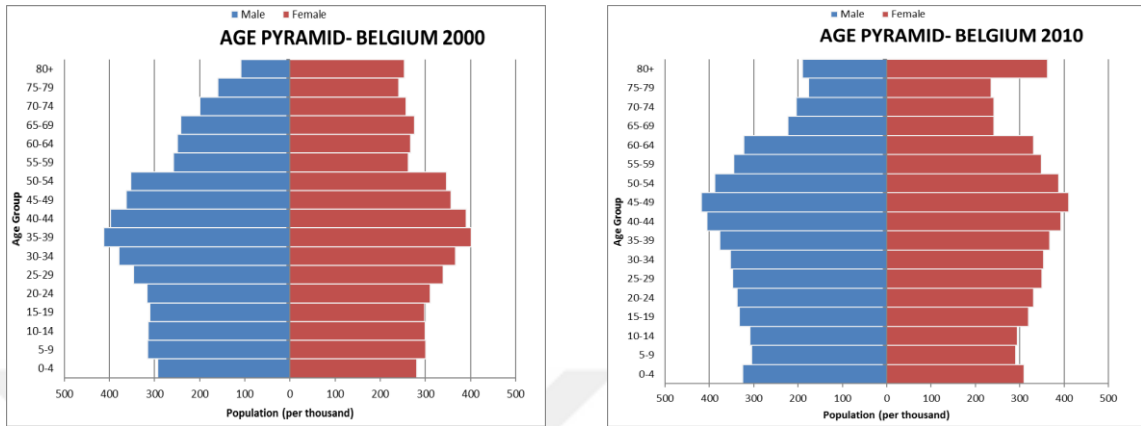
Figure A 2: Demographic Transition and Main Migration Policies in Belgium, 1950-2010
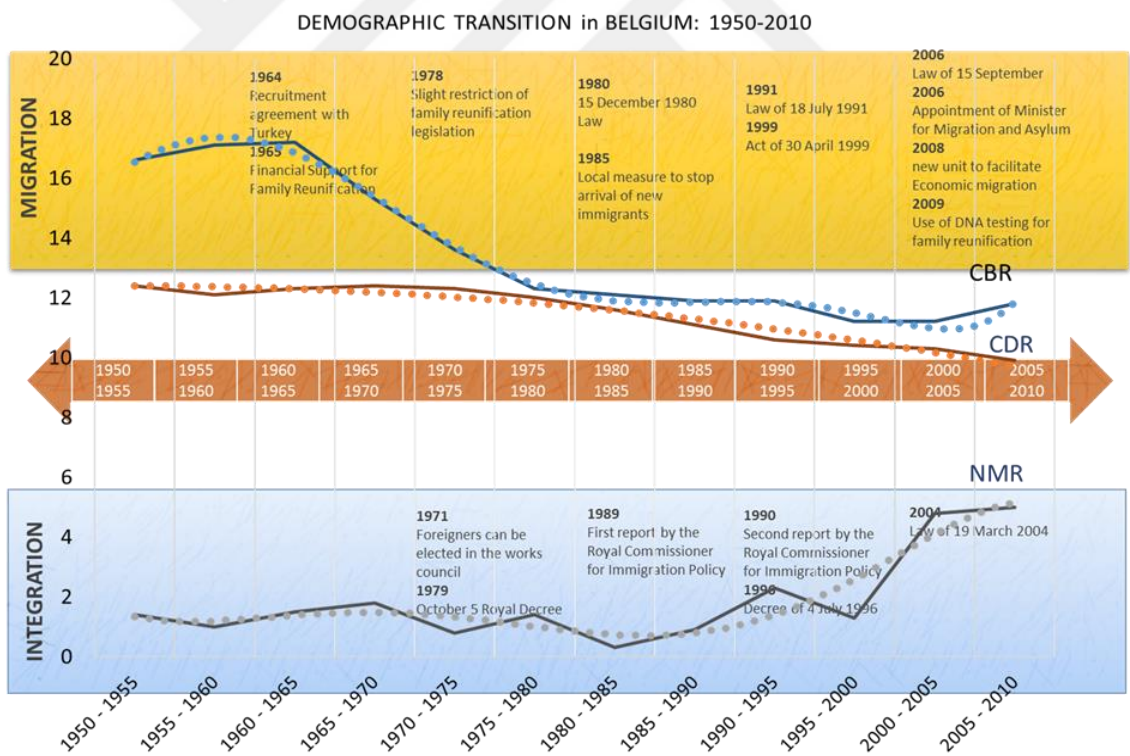
Between 1950 and 1955, the crude birth rate in Belgium was 16.4, a slight increase of 17.2 between 1960 and 1965. Within 10 years, the rate of rough births showed a sharp decline. From 1975 to the present day, it dropped from 12.3 to 11.8. Meanwhile, in the 1950s and 1960s there was a significant difference between crude birth and crude mortality rates, but by 1975 this difference had decreased. The crude

death rate, which was 12.4 between 1950-1955, did not change significantly between 2005-2010, falling to 9.9. When net migration rates are examined, it is seen that Belgium has always received immigration even at low levels. From the 1950s to the 1990s, the net migration rate increased from 1.4 to 2.3. From 1995-2000 period to 2005-2010 period, it reached 5 levels. Although the net migration rate of Belgium is not very high, a number of migration policy regimens have been made.

Some of the migration policy regimes in the 1960s are labor contracts with Yugoslavia, Tunisia, Algeria and Turkey. In this period, the first work force agreement was signed with turkey in 1964. It is planned to migrate the low-skilled labor in Turkey. In 1965, Belgium identified family reunification as one of the goals of its migration policy. In this context, with the arrangement in 1965, half of the traveling expenses of the migrant partner and the children under the age of 21 were paid back. In 1974, recruitment was stopped. A more restrictive regulation was developed for any new immigration, but it was still allowed entry for people with qualifications that were not already available in the country. In 1978, certain restrictions were also introduced for family reunification. A new law on the entrance, residence, settlement, and return of foreigners came into force and it includes standard rules for expulsion and deportations. The law, passed in 1980 and enacted in 1981, was amended for family reunification in 1984. The final version of the law has reduced the legal age from 21 to 18 for migrant worker's children who will benefit from various rights. In 1985, attempts were made to make immigration more restrictive with some local tools. Some schools where the majority of foreigners have been closed down. Despite being banned in 1961, the fees for documents requested from foreigners were raised. 1991 Law focused to control irregular migration. The law introduces the possibility to keep an asylum seeker in a place at the border. In 1993, government opened centers for irregular migrants in order to fight against the transformation of rejected asylum seekers into irregular migrants and in order to organize return programs. The law of 31 April 1999 is important for employers, even if it has created a minor change. The law clarified and simplified the standards about the employment of foreigners. Another less restrictive arrangement for

migrant is Law of 26 May 2005 that eased employment of researchers and high- skilled workers. The law of 15 September 2006 makes family reunification of non-European migrants more restrictive with several special conditions such as housing conditions, a health insurance for all family members etc. In 2008, Belgium developed institutional capacity and a new unit of Economic Migration was opened within the Immigration Department. Another practice to make family reunification difficult is seen in 2009, with DNA testing as one of the criteria for family reunification.

Between 1960 and 2010, a number of migration policies in Belgium as well as various integration policies were implemented. In 1971, with the aim of targeting all immigrant workers and making major changes, foreigners can be elected in the works council.. As a result of tightened migration policies in 1970's, "A" class work permission, which is a permanent work permit at any sector of economy, was restricted for family members of works by October 5 Royal Decree. The law of 15 December 1980 gave right foreigners to appeal in court. Two action plans were prepared by Royal Commission in 1989 and 1990 that suggested an integration plan. Decree of 4 July 1996 focused on the integration of foreign nationals in French regions. With Law of 2004, migrants have the right to vote in municipal elections to non-EU foreigners who have resided in Belgium for at least 5 years.

Figure A 3: Age Structure Changes in France; 1960-2010
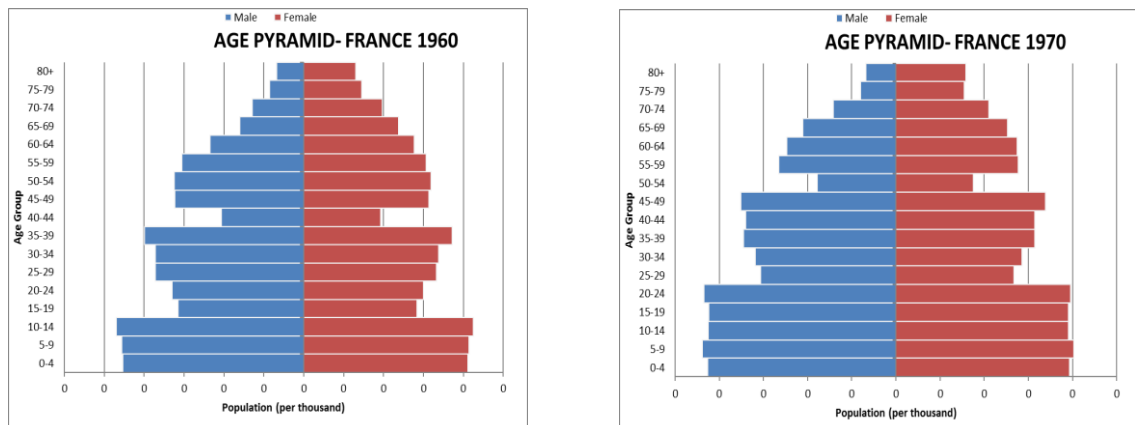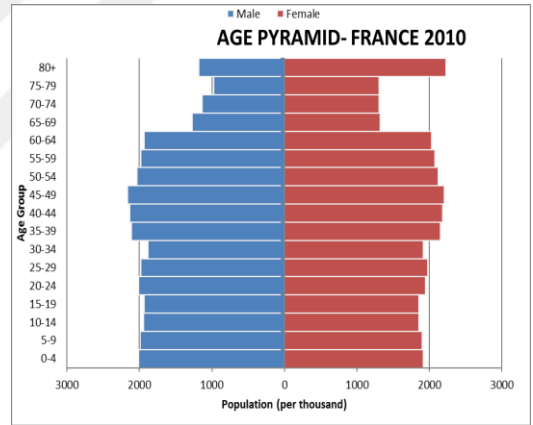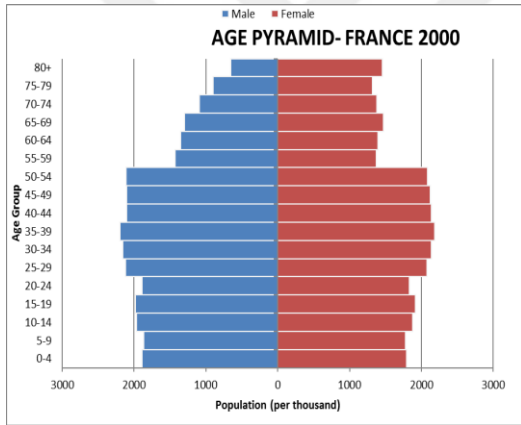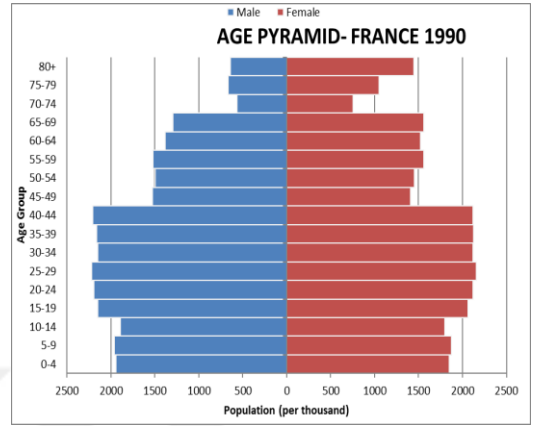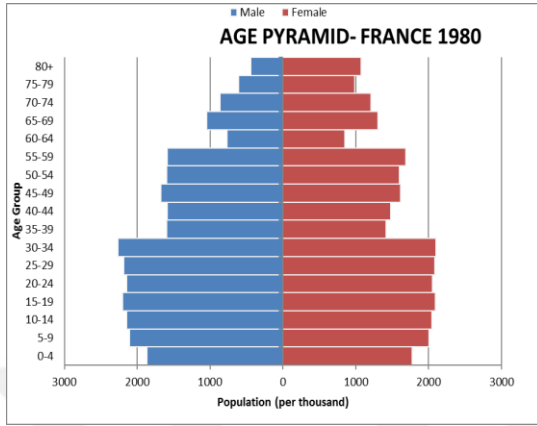
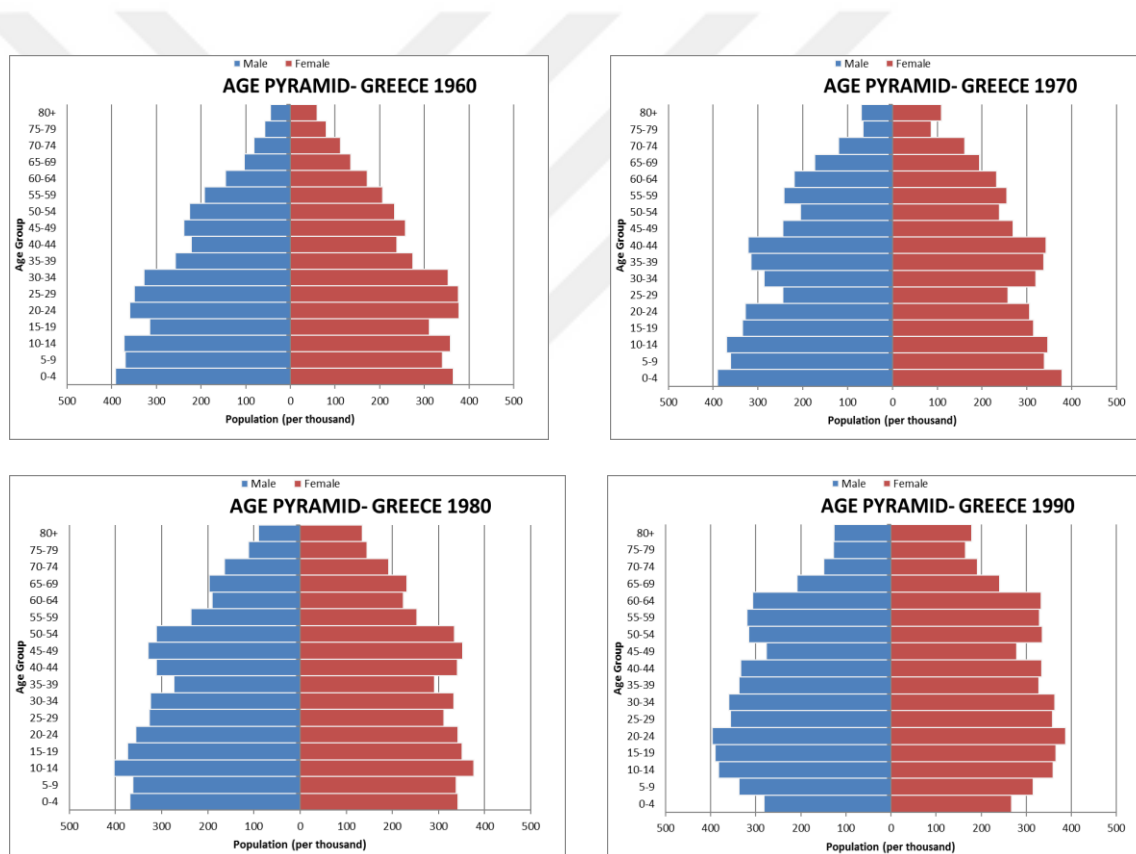Figure A 4: Demographic Transition and Main Migration Policies in France, 1950-2010

DEMOGRAPHIC TRANSITION in FRANCE: 1950-2010
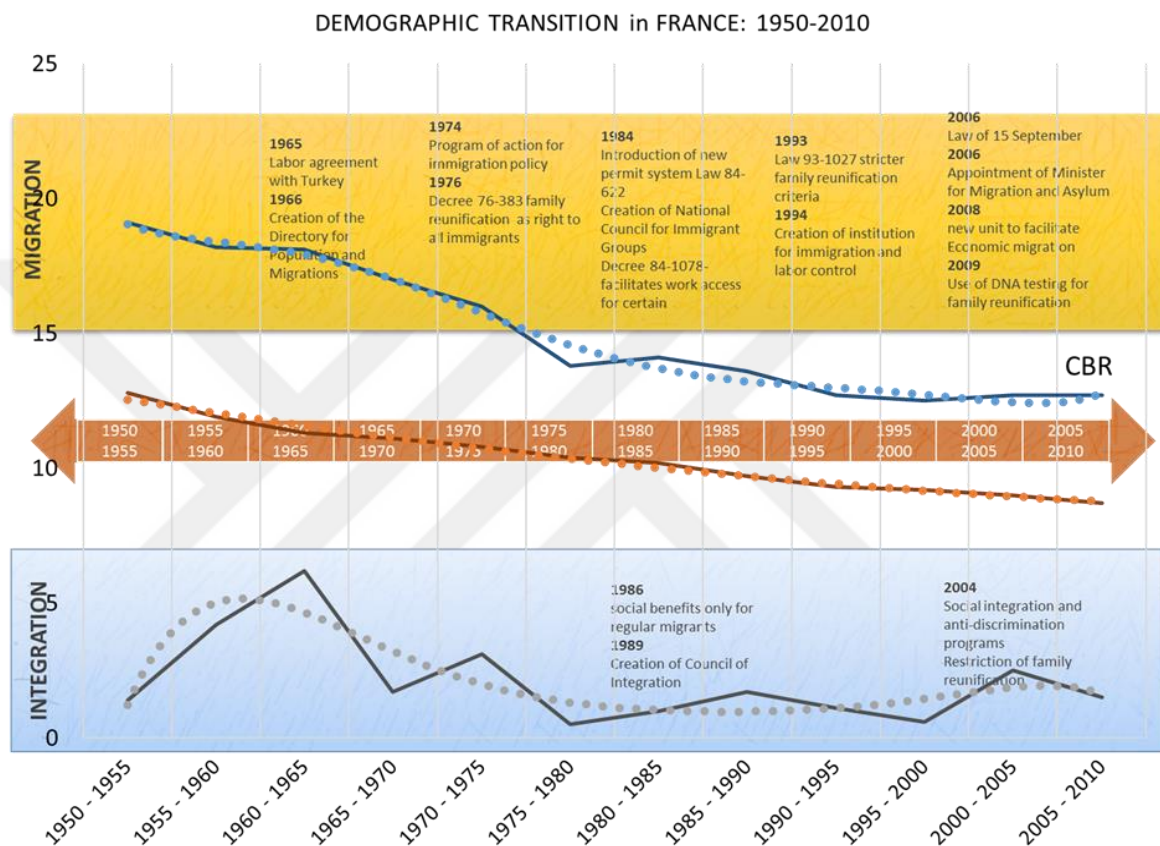
During the 1950-1955 period, the crude birth rate in France, which was 19.1, had a rapid decline in the period up to the 1975s. During the 1975-1980 period, there was no significant decline during the 30-year period from the 13.8 level, and it was 12.7 for the 2005-210 period. On the other hand, although the rate of crude death has not fallen as much as the rate of crude birth, there is a downward trend. Over time, it dropped from 12.8 to 8.7. France does not always have an ever-increasing trend with immigration. The net migration rate shows a sharp increase in certain periods and a sharp decrease in certain periods. In 1955-1960 and 1960-1965 period, net migration rate reached to 4.2 and 6.2 respectively. On the other hand, it declined to 1.7 in the next period. At present, it shows a tendency to increase and decrease periodically. In the period of 2005-2010, it was 1.5.

France's migration indicators suggest that immigration is sometimes encouraged and sometimes tried to be controlled with strict policies. A less restrictive migration policy came into force in 1965 by labor agreement with Turkey. After a year, it was seen an improved in institutional capacity. It was created directory for population and migration. In 1974, an immigration policy action was prepared. The plan included programs for improving the facilities for the reception of foreign workers, the development of vocational training and the start of negotiations with each origin country. With 1976, France indicated detailed family reunification in Decree 76-383. The law stated that "it is a right for each person to have a normal family life". In 1984 a new law introduced new permit system. The law included integration polices for immigrants in France. Nine years after the legislation entered into force, a new law introduced stricter family reunification criteria that increased the waiting time from one year to two years. In 1994 a new institution was established for immigration and labor control. Another less restrictive migration tool was introduced in 1998 by law. The law gave right automatic citizenship for children born in France. In 2006, family reunification reached to 65 percent of immigration in France and a new law restricted family reunification by extending the required time of residence and stricter controls on marriage. In 2007, Ministry of Immigration, Integration, National Identity and Co-Development was established to supervise the administrative issues on immigration. With Law 2007-1631, knowledge about French-language and French republic test was introduced for family reunification applicants.

Additionally, several integration tools were arranged between 1960 and 2010. One of the essential arrangement was prepared by Law 84-622. National Council for Immigrant Groups and regional commissions set up. The commissions were responsible for five main areas of immigrants. It also facilitated work access for certain categories of family members. In 1986, the conditions access to social housing and family benefits were supported for regular migrants. Decree 89-912 of 19 December 1989 set up Council of Integration. After the improvement in integration issues, a human right based perspective came social integration and anti-discrimination programs into force in 2003.

In 2007, a new integration contract introduced. It stated that "Migrants must receive training on the rights and duties of parents in France and make a commitment to respect the requirement to educate their children".

Figure A 5: Age Structure Changes in Finland; 1960-2010
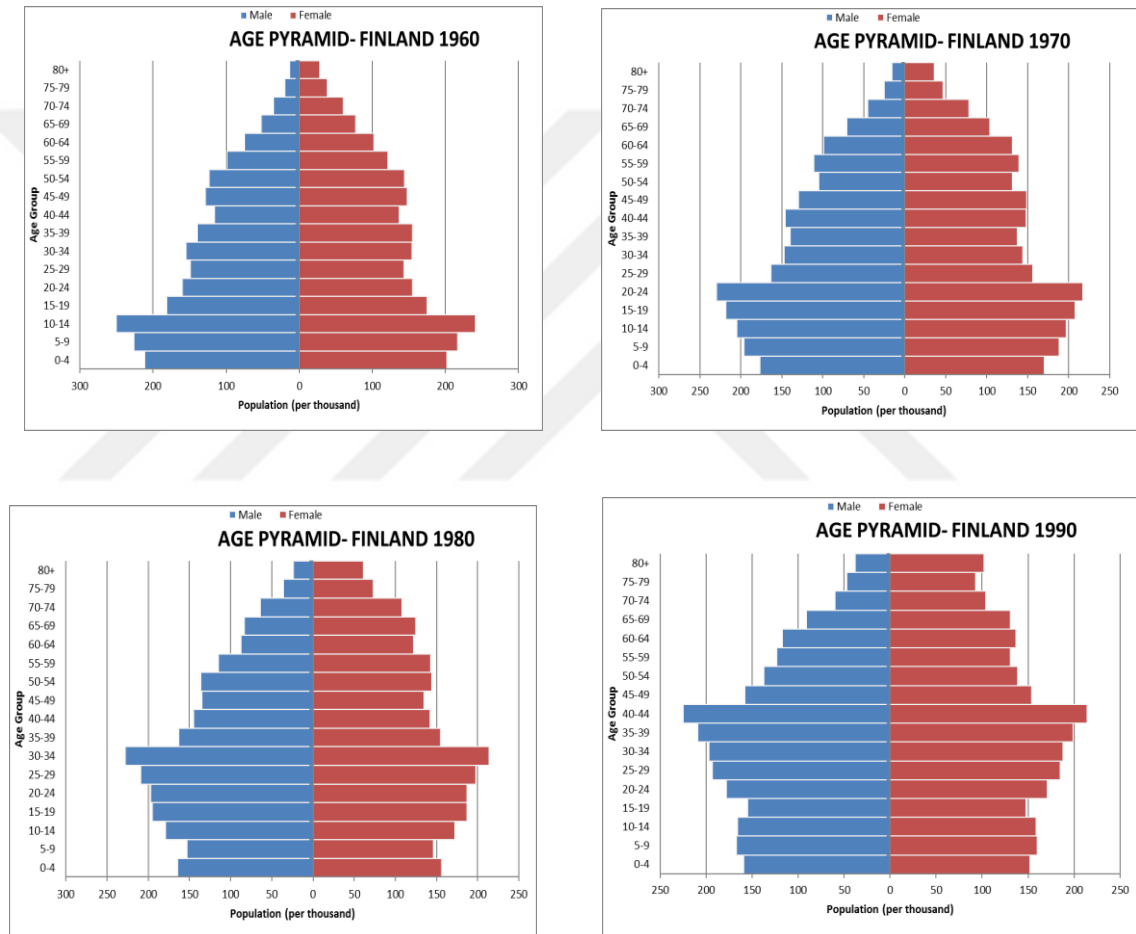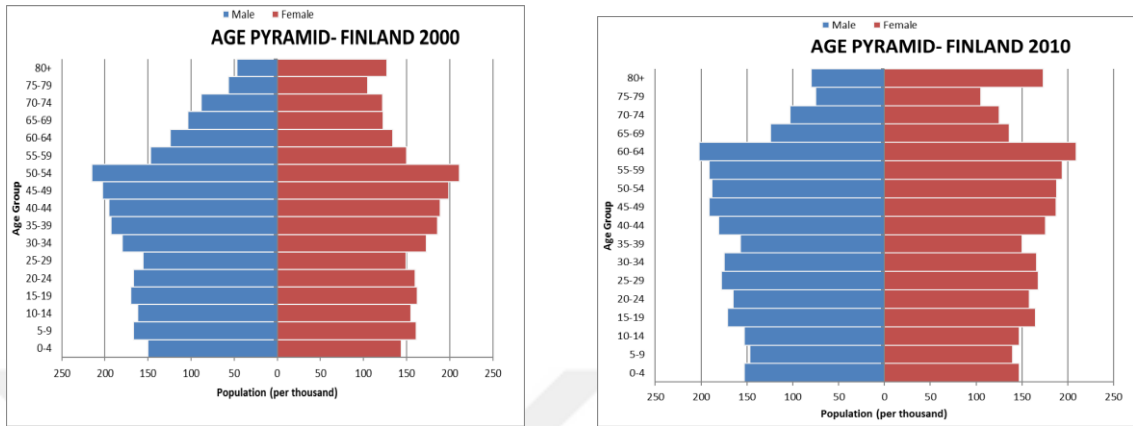
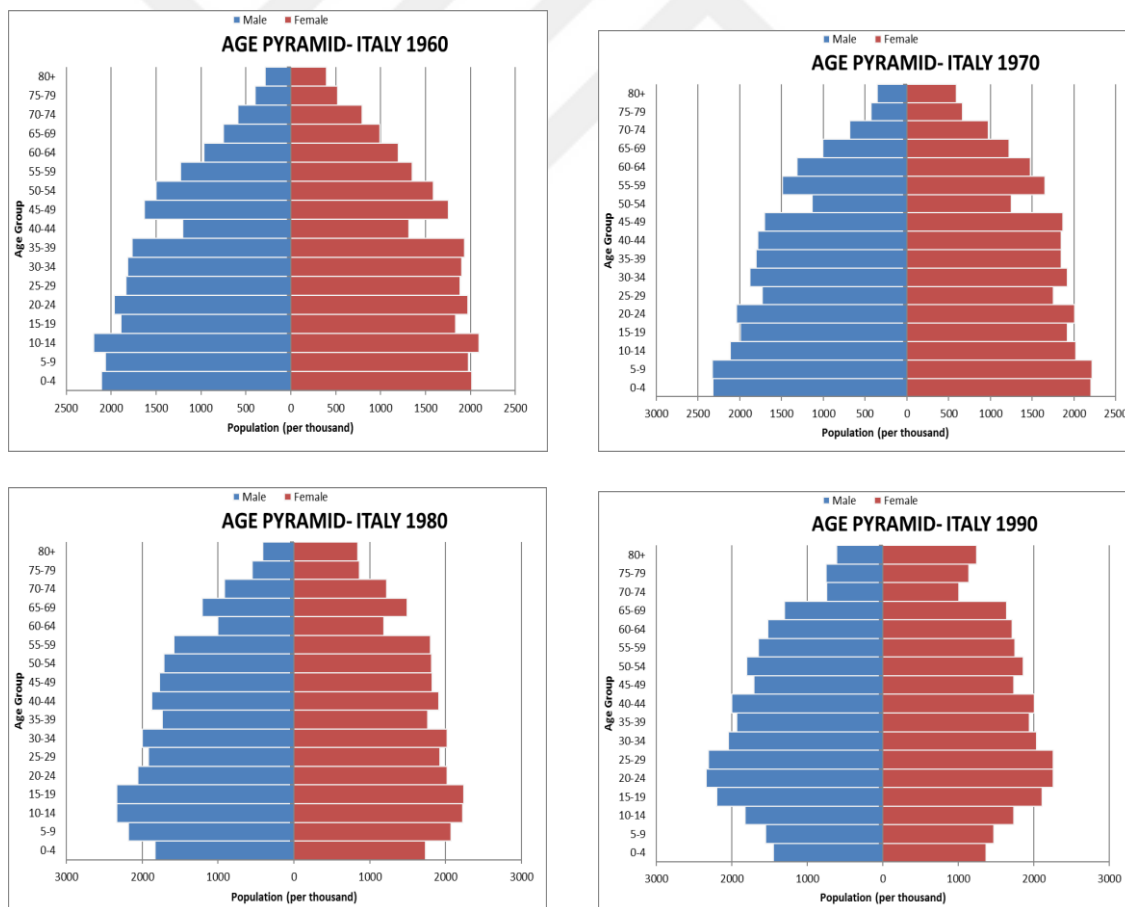Figure A 6: Demographic Transition and Main Migration Policies in Finland, 1950-2010
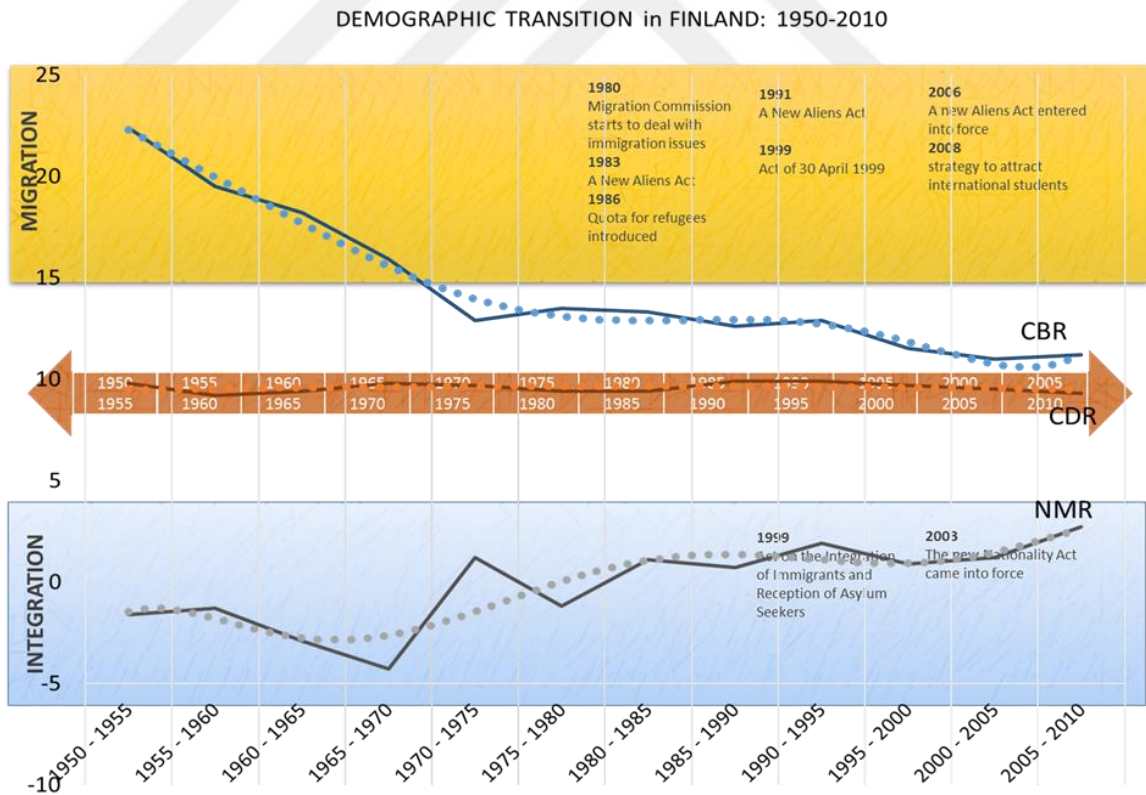
Finland's crude birth rate has fallen since the 1950s, and by 1975 it had stagnated at 12. From the 1950s to the 1970s, the rate of rough births has decreased by almost half. This rate, which was 22.4 in the 1950s, declined to 12.9 in the 1970-1975 period. Between 2005 and 2010, this rate is at 11.2. When the crude mortality rates are examined, it is seen that no major changes have occurred in the last 60 years. It is observed that it was at 9.8 level in 1950-1955 period and 9.3 level in 2005-2010 period. Due to the decline in the crude birth rate, the rate of natural increase has fallen and population growth has slowed down. When the migration data is analyzed, it can be seen that Finland has been transformed into an immigrant country in time. In the period 1950-1955 Finland was a origin country due to the net migration rate of -1.6. It is seen that in 2005-2010 period, it has turned into a destination country that has net migration rate of 2.7 level.

When examining both immigration and integration policies, since 1980, the regulations on 6 basic immigration policies and the regulations on 2 basic integration policies draw attention. In 1980, Migration Commission started to deal with immigration issues, though the previous target group is emigrants of Finland. With new Aliens Act, which came into force in 1984, give rights to foreigners to appeal granted for immigration decisions. The regulation loosening immigration policies in Finland. On the other hand, in 1986 a more restrictive policy tool was introduced. The government decided to set a quote for the number of refugees who could be accepted. The quota was set at 100 for that time. A new Aliens Act was prepared in 1991 and amended many times. The law included regulations on arrival, departure, residence and working of foreigners and it listed several separate categories for residence permits. Another Aliens Act entered in May 2004 and it merged work permit and residence permit into a single permit for worked emigrants. Additionally, to attract high-skilled students and internationalize the higher education in Finland a new strategy plan was designed. They increased the number of foreign students and exchange students in the country.

An Act on Integration of Immigrants and Reception of Asylum Seekers gave responsibilities to municipalities about the integration of foreigners in the country. The municipalities were responsible for arranging immigrants' education, language education and financial support during the time of integration. With New Aliens Act in 1993, stricter language skill requirements are introduced.

Figure A 7: Age Structure Changes in Greece; 1960-2010
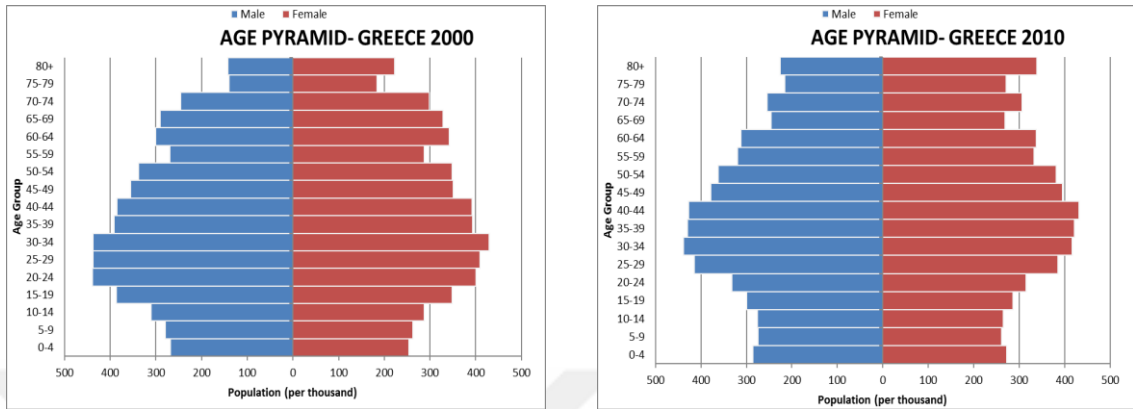
Figure A 8: Demographic Transition and Main Migration Policies in Greece, 1950-2010
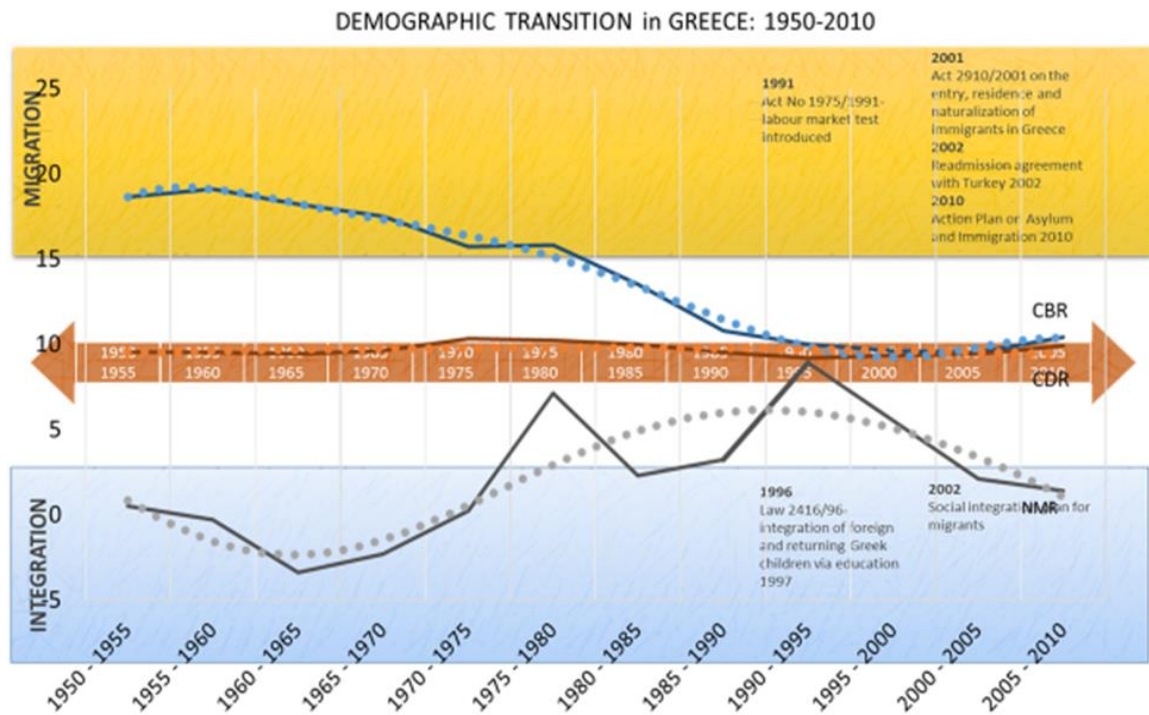
The crude birth rate of Greece has been around 18 from the 1950s through the 1970s. Between 1955 and 1960 it was seen to be 19.1. A rapid decline was observed in the 1970-1975 period. The coarse birth rate, which was 15.7 in this period, declined to

10.4 in 2005-2010. There was no significant change in the crude death rate. This rate, which was 9.5 in the period 1950-1955, increased somewhat in the period of 1970-1975 and it was 10.3 in the period and 9 in the other periods. In 2005-2010 period, it is in the level of 9.9. When the net migration rate is examined, it is seen that Greece is a country that emigrated in the period up to the 1975s. The value of this rate has been close to zero or has taken negative values during this period. In 1975-1980 there was a sudden rise and reached 7.1 level. The net migration rate tended to increase in the period when crude births and crude mortality rates began to approach one another. It was realized as 1.4 for the period of 2005-2010.

Greece has long been focused on emigration migration policies, which has turned into a destination country from an origin country over time. In 1991, Act No 1975/1991 came into force and the law established strict rules for foreign labor market. The law stated that foreign worker was dependent to employer and in the case of a dismissal, the foreign worker has to be deported. The law also introduced very restrictive naturalization criteria for migrants. The law had a part on family reunification. It allowed family reunification after the renewal of first five-year work permit. A change at entry, residence and naturalization procedures were performed by a new law which came into force in 2000 (Act 2910/2001). With the law, quota for work permit was introduced, but it included less restrictive parts. It decreased the required period for family reunification (from five years to two years), required period for permanent residence and it gave opportunity to foreign students' part-time work. In 2002 readmission agreement with Turkey was signed. The agreement stated that illegal migrants from Turkey are deported back to their origin country. A more coordinated and institutional immigrants law was introduced in 2005 (Act 3386/2005). The law merged residence and work permit into a single permit It introduced certificate of Greek language for permanent residency and promote investment with investor permit. It also provided equal social security insurance right to legal migrants and they could benefit of the same social, labor and security rights as Greek workers. In 2010 an action plan on asylum and immigration was prepared.

Although, with law 2416/1996 established an integration program for children of foreigners and return Greek families via education, first real integration tool was introduced in Act 2910/2001. The law guaranteed the equal access right to the courts, social services and health for regular migrants, education right to irregular migrants. Via 2002 integration plan, training and information centers for migrants were established to integrate migrants, increased cultural exchanges and improve the access to social services. Additionally, in that year The Immigration Policy Institute was established to conduct surveys and studies on integration of migrants.

Figure A 9: Age Structure Changes in Italy; 1960-2010
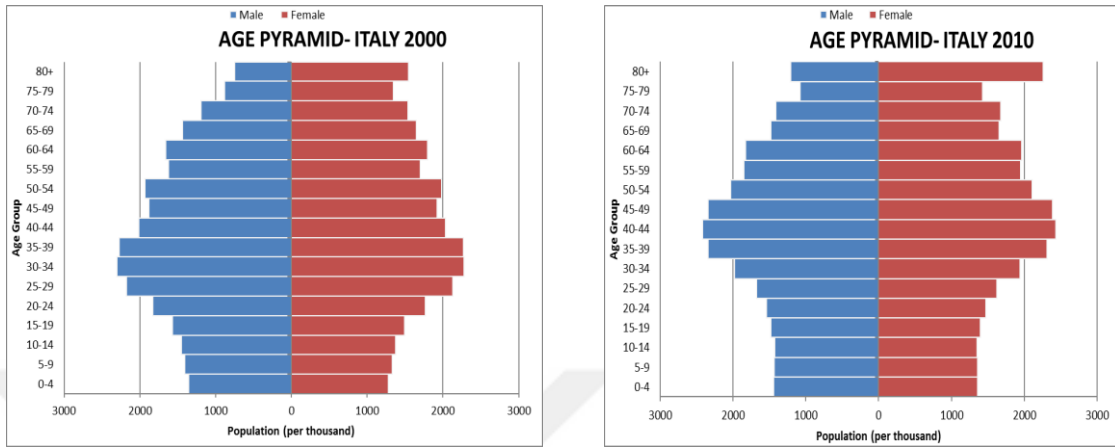
Figure A 10: Demographic Transition and Main Migration Policies in Italy, 1950-2010
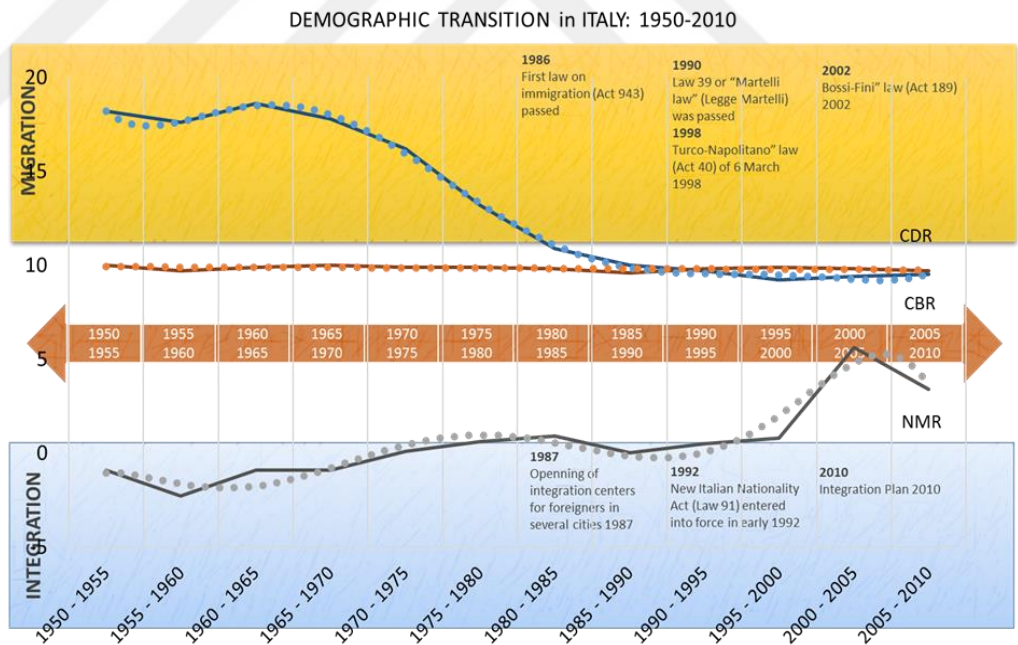
From 1950 to 1975, there was no significant change in the rate of crude births. This rate, which was 18.2 per cent in 1950-1955, fell to 16.2 per cent between 1970 and 1975. In the period of 1975-1980, it decreased rapidly and became 13.2, and the following period decreased to 10.9 level. In later periods, it stood at 10 levels. In the period of 2005-2010, the crude birth rate of Italy was 9,5. No major differences were

found in the crude death rate. In the period of 1950-1955, the speed of 10 was in the period of 2005-2010 and it was 9.7 in the period. The net migration rate shows that Italy has been an origin country for many years. Until 2000, this rate has always been below one level. It is seen that there is a large increase in the net migration rate with the crude birth rate being tangent to the crude death rate and the crude death rate passing the crude birth rate. This rate, which was 0.8 for 1995-2000, was 5.6 in 2000-2005 and dropped to 3.4 in the following period.

In 1986, first immigration law passed, but many parts of the very liberal law were not implemented. It included very liberal family reunification criteria and access to labor market. If foreign workers support his/her spouse and unmarried children, they had chance to join in Italy. It also has a regulation on irregular migrants. In 1990 Martelli Law was a first law that reformed the Italian asylum seeking procedure. With the law, it was possible for non-European migrants to apply asylum seeking. In 1990 Turco-Napolitano Law expanded job-seeker's residence permit to one year for immigrants. But another law came into force in 2002 and it introduced strict migration procedures. It introduced a requirement for non- European immigrants to have contract prior to immigration. In time migration policies in Italy has got away from liberal features. Now it has been more restrictive than past procedures. In 2009, law 94 introduced sanctions for illegal entry and it was punished with 10.000 euros.

The law passed in 1986 gave very liberal social benefits to migrants as an integration policy. Moreover, integration centers in several cities were opened. These centers gave them all the information about legal protection, medical treatments, regularizing their employment and residence permit. Another policy which had major effect on integration of immigrants is Law 91. According to law, second generation can apply for citizenship under certain circumstances. In 2010 a strategy on integration was developed and an integration plan was prepared.

Figure A 11: Age Structure Changes in Netherland; 1960-2010

Figure A 12: Demographic Transition and Main Migration Policies in Netherland, 1950-2010

DEMOGRAPHIC TRANSITION in NETHERLAND: 1950-2010
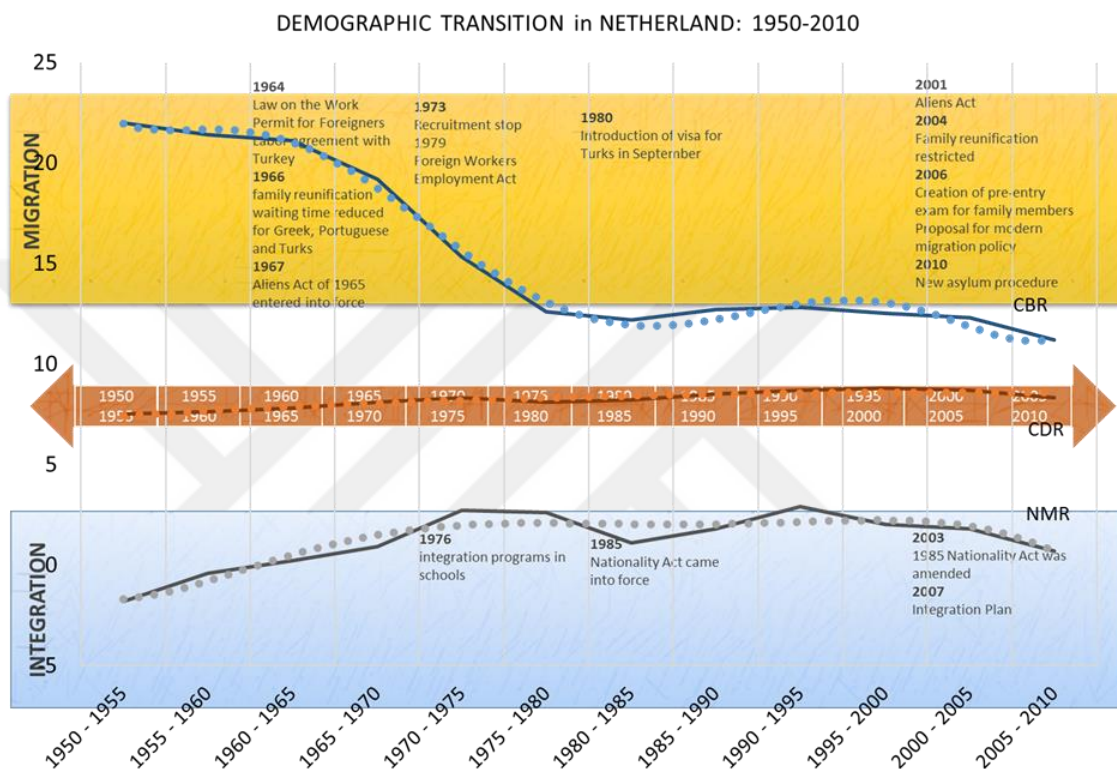
The crude birth rate of the Netherlands ranged from 22 to 19 during the period from the 1950s to the 1970s. By the time of 1970-1975, this rate has reached a level of 15.3 with a sharp decline. This decline continued in the next period with the same stiffness and 12. In the ongoing periods, it has fluctuated around 12 and has been 11.2 for 2005-2010 period. When the crude mortality rates were examined, this rate, which was 7.7 in 1950-1955 period, rose to some extent over time and became 8.3 in 2005-2010 period. The net migration rate shows that it was a country that emigrated until 1970. During the period 1970-1975, the net migration rate was 2.7, which fluctuated in these levels until 2005. It fell to 0.7 in 2005-2010.

In 1964, Netherland introduced a law on the work permit of foreigners that was the replacement of restrictive law of 1934 and it provided employers to recruit foreign workers for low-skilled jobs without a work permission. In this regard, the first

recruitment agreement was signed with Turkey in 1964. In the following years, family reunification waiting time reduced for Turks, Portuguese and Greeks. Additionally, foreigners had the right to appeal for foreigner law. The recruitment stopped in 1973. A new alien act was introduced in 1979 and it gave equal rights for men and women. It also introduced quota for foreigners within each company. Each year 750 refugees were accepted according to decision in the law. With a legal arrangement, visa has been required for Turks. Another restrictive law was introduced in 2001 and it covered several sides of migration issues. One of the part is about the income requirement for family reunification, it increased to discourage family reunification from Turkey and Morocco and to prevent fake marriage. Another restrictive tool for family reunification was introduced by Law on Integration Abroad (2006). A sufficient level of Dutch language and an integration exam were designed for pre-entry of family members. The same year a proposal on modern migration policy was prepared for a revision of the current admission system. A scoring system was established for foreign entrepreneurs and self-employed. In 2010 a new asylum procedure entered into force.

The integration policies provided fine-turning on the migration issues. In 1976, integration was promoted via language and education levels. Additional teachers were responsible for helping integration of foreign students. In 1985 naturalization requirements lowered, the criteria were modest level Dutch language oral exam certificate and no serious criminal record. The requirements had been valid until 2003. In 2003 naturalization law was amended and language and citizenship tests were introduced. With Civic Integration Act in 2007, integration exam became compulsory for all to access benefits and residency. In that year, an integration memorandum was held to improve the quality of civic integration.

Figure A 13: Age Structure Changes in Norway; 1960-2010
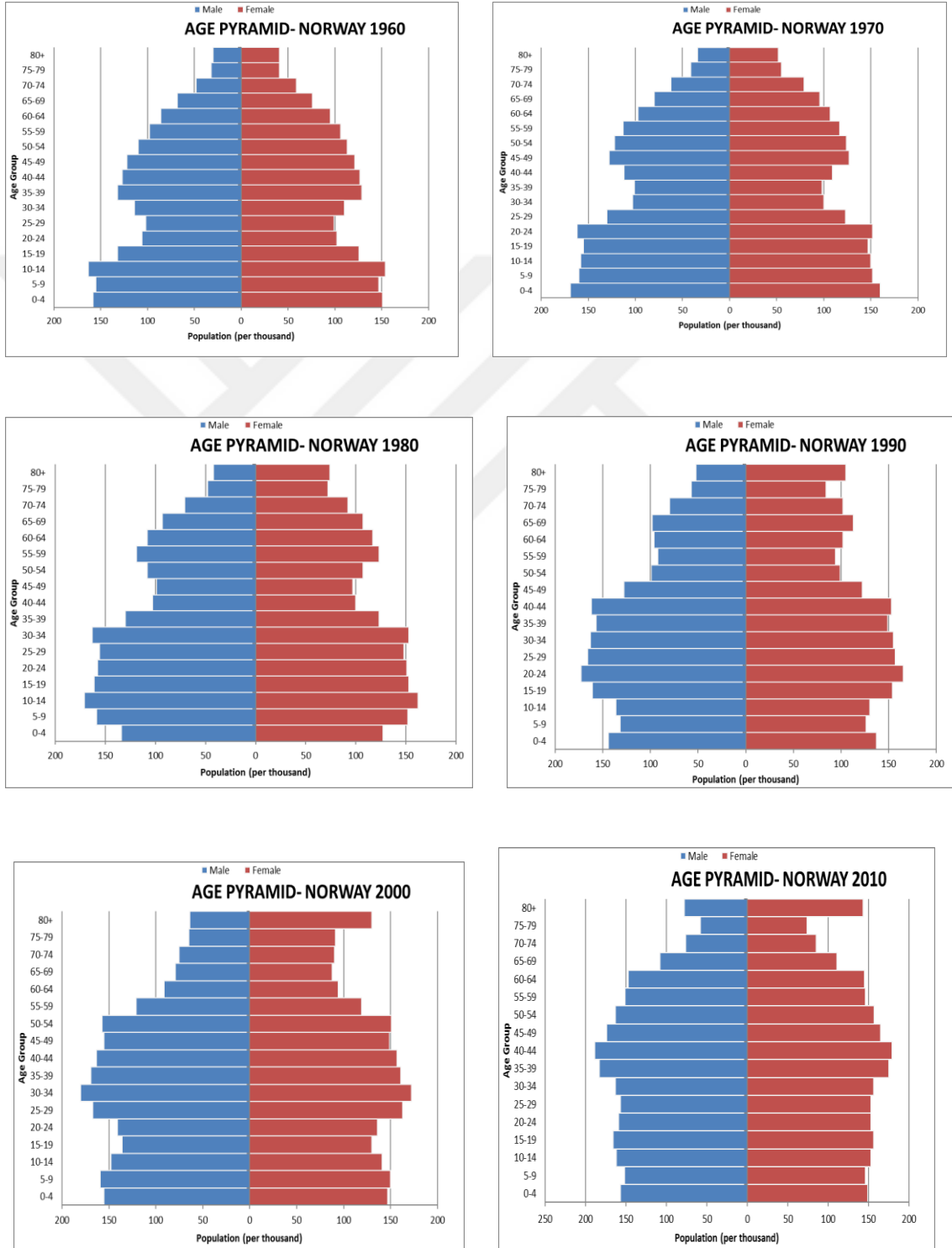
Figure A: 14 Demographic Transition and Main Migration Policies in Norway, 1950-2010:

DEMOGRAPHIC TRANSITION in NORWAY: 1950-2010
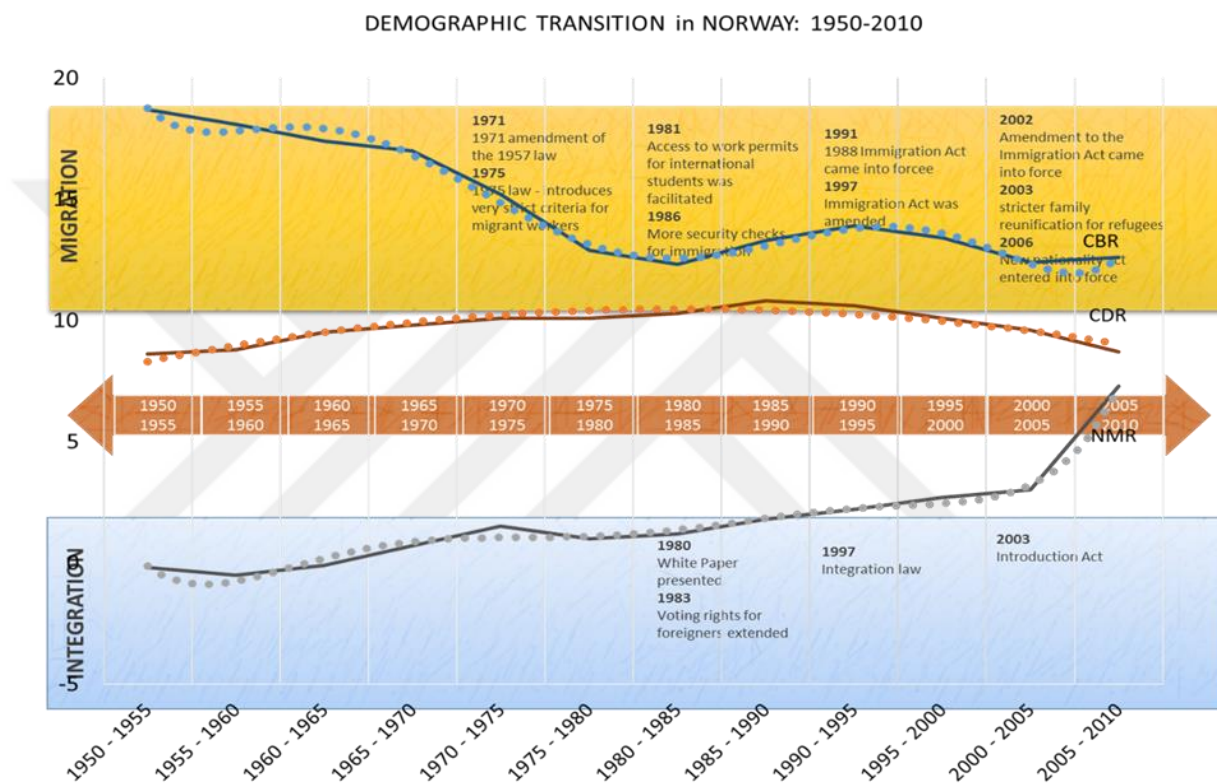
When Norwegian crude birth rate is examined, it is seen that during the period 1950-1955 it was at 18.7 and during the period 1970-1975 it fell to 15.2. By the time of 1975-1980, this rate also fluctuated around 12. Between 2005 and 2010, it was 12.6. By the year 1970, the crude birth rate was mostly around 8 or 9. It has increased slightly from 1970 to 2000 and has received a value of 10. The net migration rate shows that Norway is an emigrant country in the period up to the 1970s. From the 1970s to the 1990s it showed slight increases. The migration rate increased from 2.2 in 1990 to 7.2 in 2005-2010.

The migration policies were genrally restricitive policies. In 1971, the conditions of work permit were applications for work before migrating to Norway and

arrangement of accommodation before migrating to Norway. It was regulated by an amendment of the 1957 Law. In 1975 a stricter regulation was performed. 1975 Law forced employer to confirm that the foreign worker was a specialist and forced employer to offer a comparable wage as natives' wages. The law was the first legislation to stop the immigration. In 1981, entry, work and stay conditions of students in Norway were facilitated. On the other hand, more security controls on immigrants were introduced in 1986. The police had right to collect passports of migrants before their arrival to Norway. 1998 Immigration Act came into force in 1991 and provided restrictive control mechanisms. The act also strengthened the requirements in Immigration stop that was prepared in 1975. The amendment of Immigration Act to deal with irregular migrants was prepared. The punishment of illegal entry to Norway was prison sentence and it raised from two year to five year via the amendment. In 2002, a less restrictive tool was introduced. The new amendment facilitated the recruitment of high-skilled workers and three-month visa was allowed to job seekers from non-EEA highly skilled labor market to have. In 2003, a restrictive legislation came into force for family reunification of refugees. In 2006, a naturalization law was introduced and a certain level of Norwegian language and 300 hours language training were the preconditions for citizenship. The new immigration act of 2008 merged residence and work permit into a single document.

Integration program in Norway includes several integration plan and policies. In 1980 White Paper on Integration was prepared. The paper stated that integration in the country was not focus on assimilation, the aim of the program is adaptation of immigrants into culture of the country and protecting immigrants from assimilation. The perspective provided new rights for immigrants in following years. In 1983, immigrants could have voting rights in the country and municipal elections, if they had residence permit over three years. Another integration plan was presented to respect immigrants' language and culture in 1988. In 1997, integration law, which focused on job and language training programs, was accepted. With 2003 Introduction Law, refugees had to participate in an introductory program to meet their individual needs.

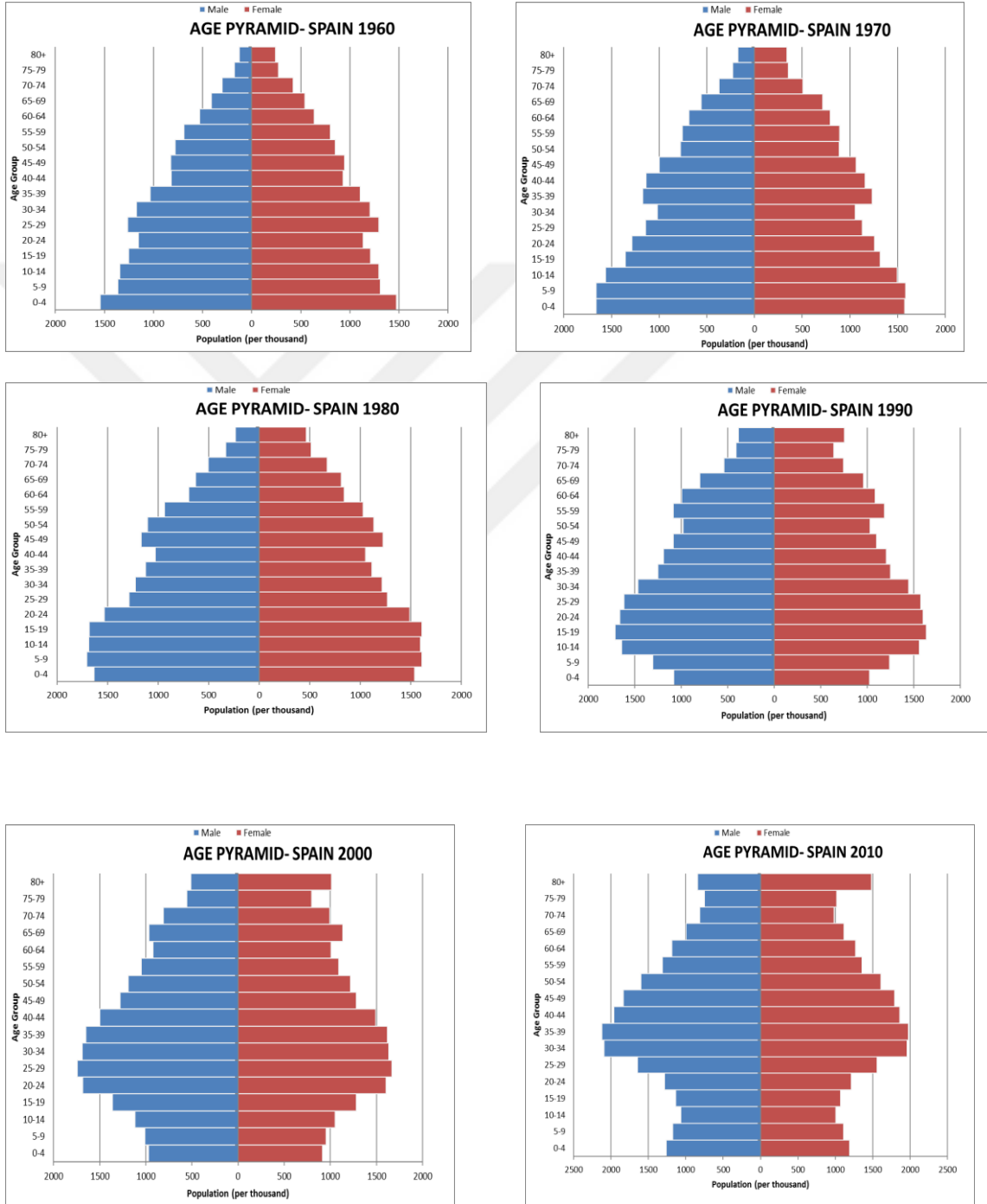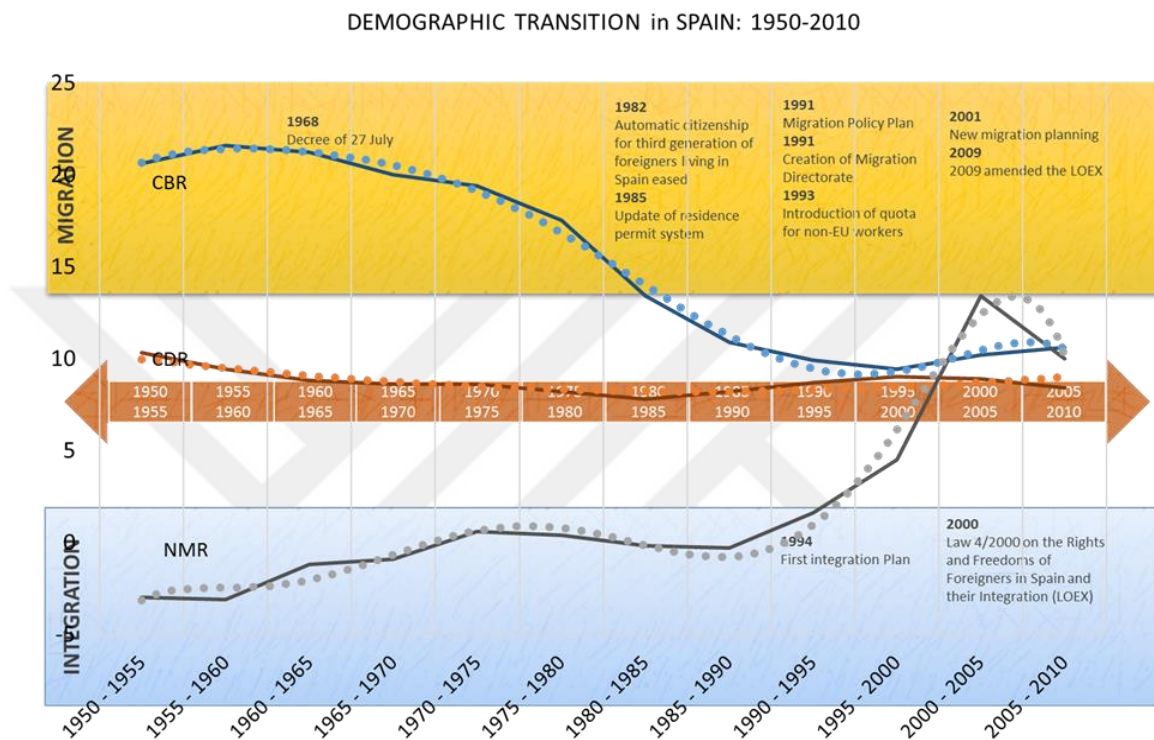Figure A 15: Age Structure Changes in Spain; 1960-2010

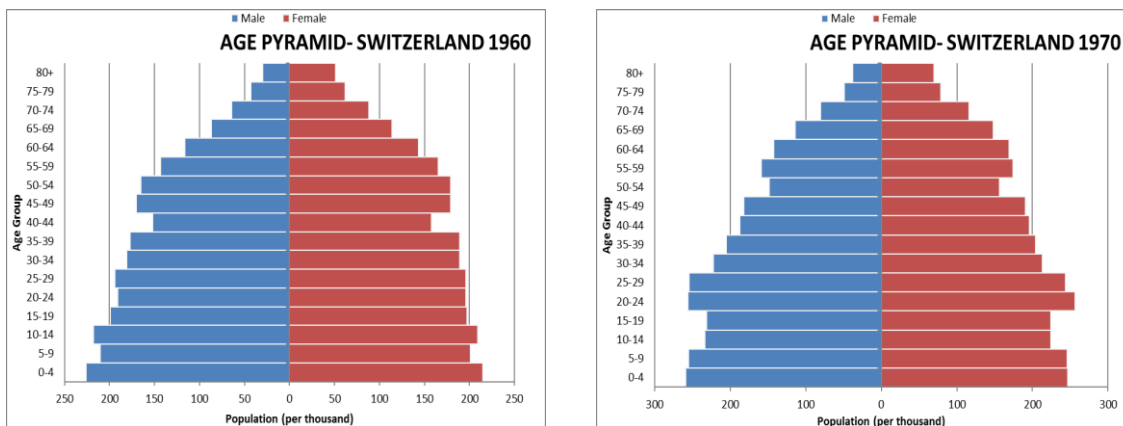Figure A 16: Demographic Transition and Main Migration Policies in Spain, 1950-2010

DEMOGRAPHIC TRANSITION in SPAIN: 1950-2010

Although the rate of crude birth in Spain declined over time, it was always around 20 per cent in the 1950-1975 period. As of 1975, sharp declines were observed. It dropped from 17.5 to 13.5 in the period of 1975-1980, and then decreased to 10.9. It was calculated as 10.6 for 2005-2010 period. The crude mortality rates did not change much, but in the 1950s it was at 10.3, falling to 7.8 in the 1980-1985 period. After that, it showed some increase and reached to 8.4 level. There were sharp increases in the net migration rate of Spain, as crude birth and crude mortality rates were close to each other. Spain was a country that emigrated until the 1990s, but by the 1990s they had experienced sharp increases in immigrant exports. The net migration rate, which was 1.6 in 1990-1995 period, was 4.5, 13.4 and 10 respectively in the following periods.

Government in Spain introduced a new residence permit system in 1985 that identified three types of permits. The permits were an initial permit (from three months

to two years), an ordinary permit (valid for five years) and a special permit (valid for ten or more years). In 1991, migration policy plan was prepared and it aimed to (I) the development of an active immigration policy, (ii) the modernization of border systems, (iii) the development of a visa policy, (iv) the increased fight against irregular employment, (v) the promotion of social integration of foreigners and (vi) the continuation of European integration and the entry into the Schengen agreement". In the same year, the Directorate General for Migration was established. In 1993, quota for on-European workers was set at 20600 per year. In 1995 the quota was increased to 25.000 per year, but it reduced for agricultural workers. A new migration planning was prepared that covered four key areas of migration and included 72 activities for managed, coordinated and integrated migrants. In 2009 less restrictive amendment of Organic Law 2/2009 was accepted. The law provided family reunification rights for unmarried couples, but the other amendment of the law was restrictive migration policy by increasing income requirements for family reunification.

The first integration plan was prepared in 1994 and focused on legal protection of immigrants against discrimination, equal working conditions as citizens, more education for children and women, special regulation of integration and increased participation in public life. In 2000 the rights expanded to irregular migrants.

Figure A 17: Age Structure Changes in Sweden; 1960-2010
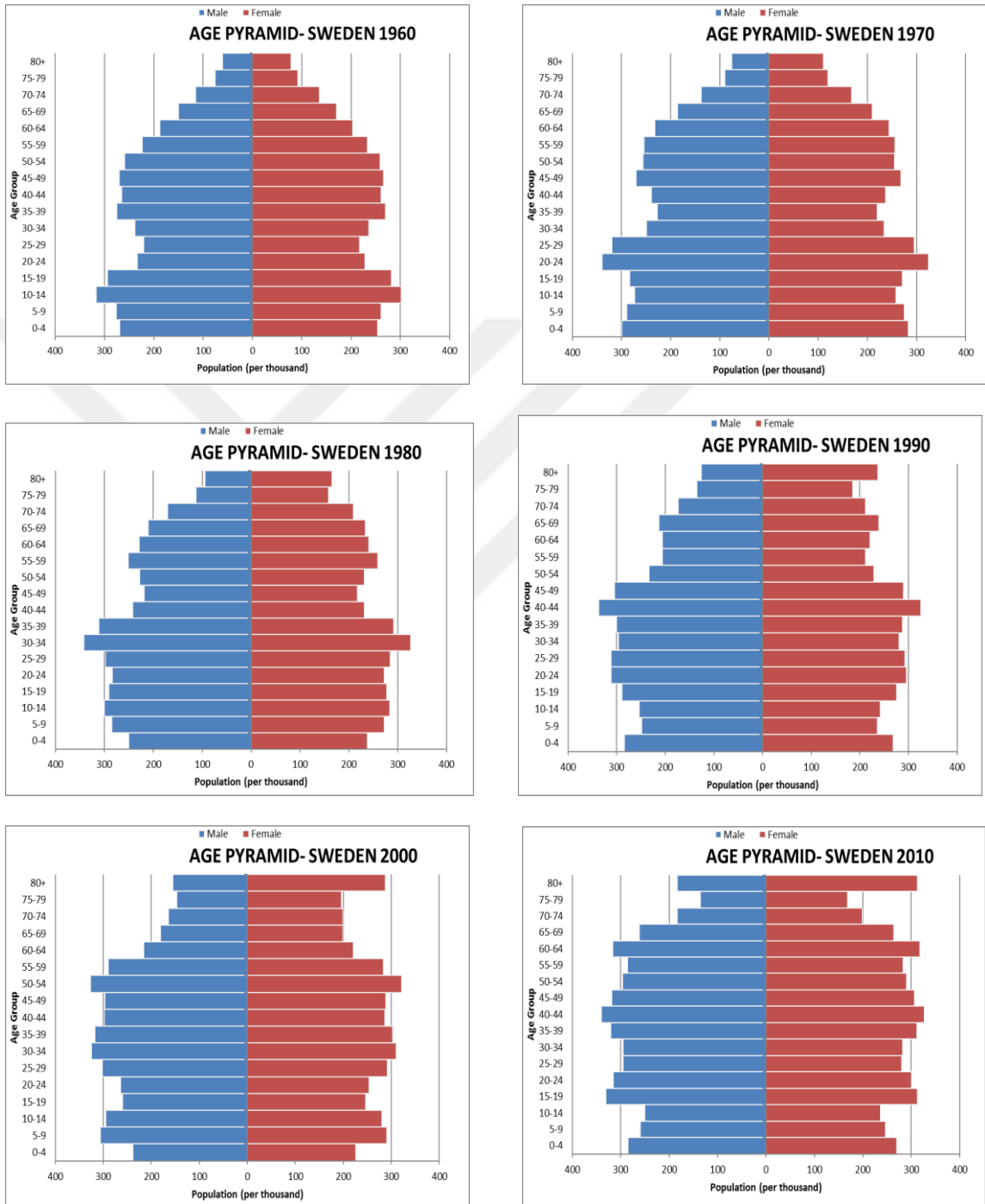
Figure A 18: Demographic Transition and Main Migration Policies in Sweden, 1950-2010

DEMOGRAPHIC TRANSITION in SWEDEN: 1950-2010
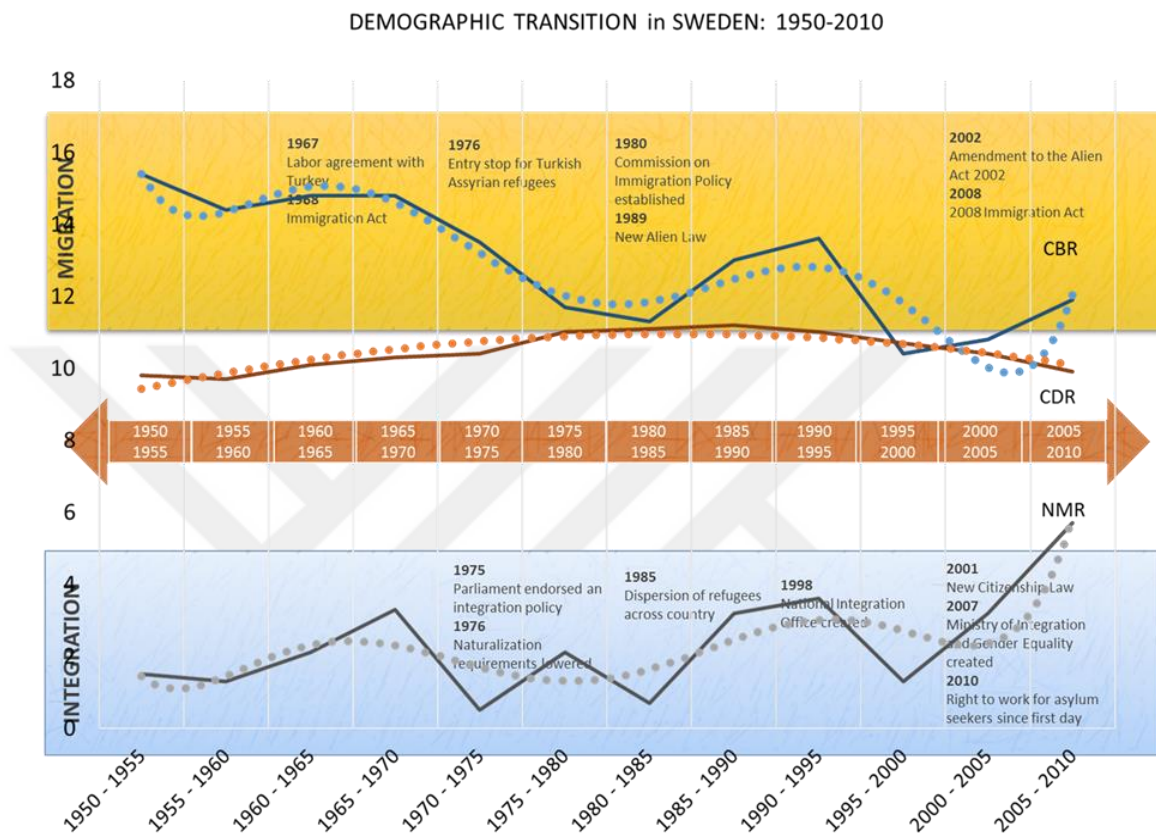
The crude birth rate, which was 15.3 in Sweden in the 1950s, declined to 11.7 in 1975-1985, and fluctuated around 13 in the period 1985-1990 and 1990-1995. After 1995, this rate was 10 and 11 respectively. The crude death rate increased from 9.8 to 11.2 over time, then decreased to 9.9 in 2005-2010. Sweden is a country that receives immigration even in the 1950s. Despite sharp increases and decreases in the period, the net migration rate trend shows an overall increase. In the period 1950-1955, the rate of 1.5 became 5.7 in the period of 2005-2010.

In 1967, labor agreement with Turkey was signed and started a restrictive work permit policy that covered arrangement of employment and accom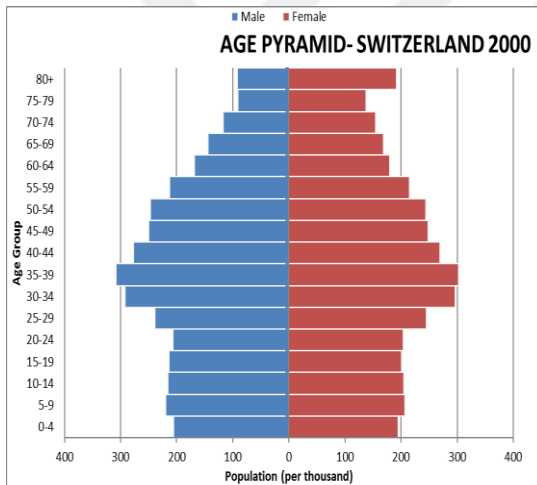modation. Additionally, in 1968 they developed a strategy to pull entrepreneurs and facilitated entry permission of entrepreneurs. In 1976 amendment of 1975 Act restricted the entry of Turkish Assyrians to enter Sweden because the government accepted Christian

minority of Turkish Assyrians as refugees with a residence permit, but 6000 Turkish Assyrians immigrated within a short time and all of them settled in the same area. In 1980 a Commission on Immigration Policy was established. In those years, family reunification and acceptance of refuges started to be accepted based on the labor market needs. An amendment in Alien Act facilitated the entry of high-skilled labor into Sweden in 2002. In 2008, the migration policy in Sweden transformed into a demand-driven system.

In Switzerland, there are integration policies as well as minimum migration policies. 1968 Immigration Act provided equal social rights. By integration policy in 1975, immigrants had freedom of choosing assimilation or maintaining their culture. In 1985, an integration plan was adopted for refugees and by language and vocational trainings and by dispersion of several towns. In 1998, National Integration Office was established. Dual citizenship was accepted in 2001. Additionally, Ministry of Integration and gender Equality was established. In 2008, New Anti- Discrimination Law was accepted to protect immigrants form discrimination in searching job, accessing public life or arrangement accommodation. Since 2010, asylum seekers have right to work to enter job market as soon as possible.

Figure A 19: Age Structure Changes in Switzerland; 1960-2010

AGE PYRAMID- SWITZERLAND 1980

AGE PYRAMID- SWITZERLAND 1990

AGE PYRAMID- SWITZERLAND 2000
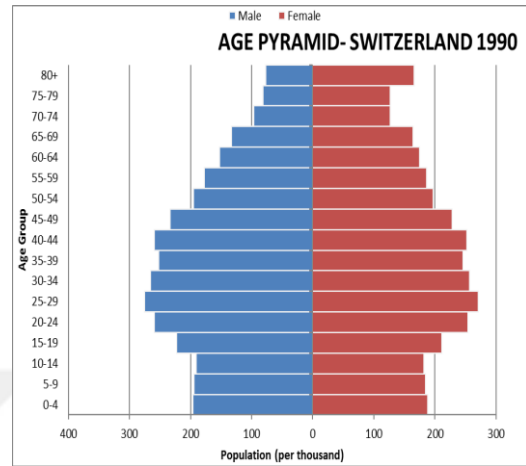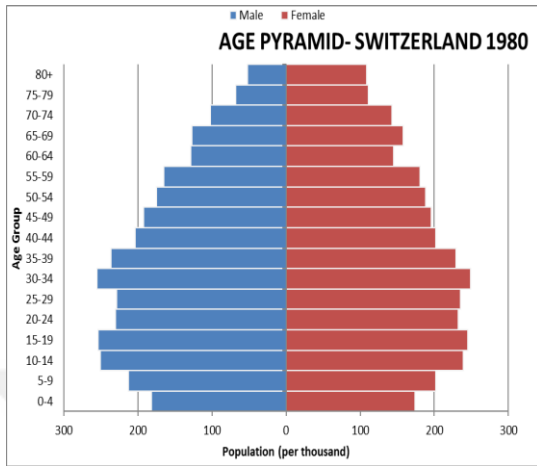

AGE PYRAMID- SWITZERLAND 2000
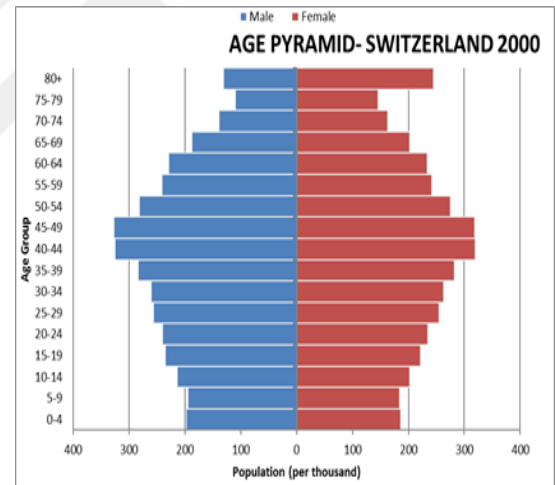
Figure A 20: Demographic Transition and Main Migration Policies in Sweden, 1950-2010

DEMOGRAPHIC TRANSITION in SWITZERLAND: 1950-2010
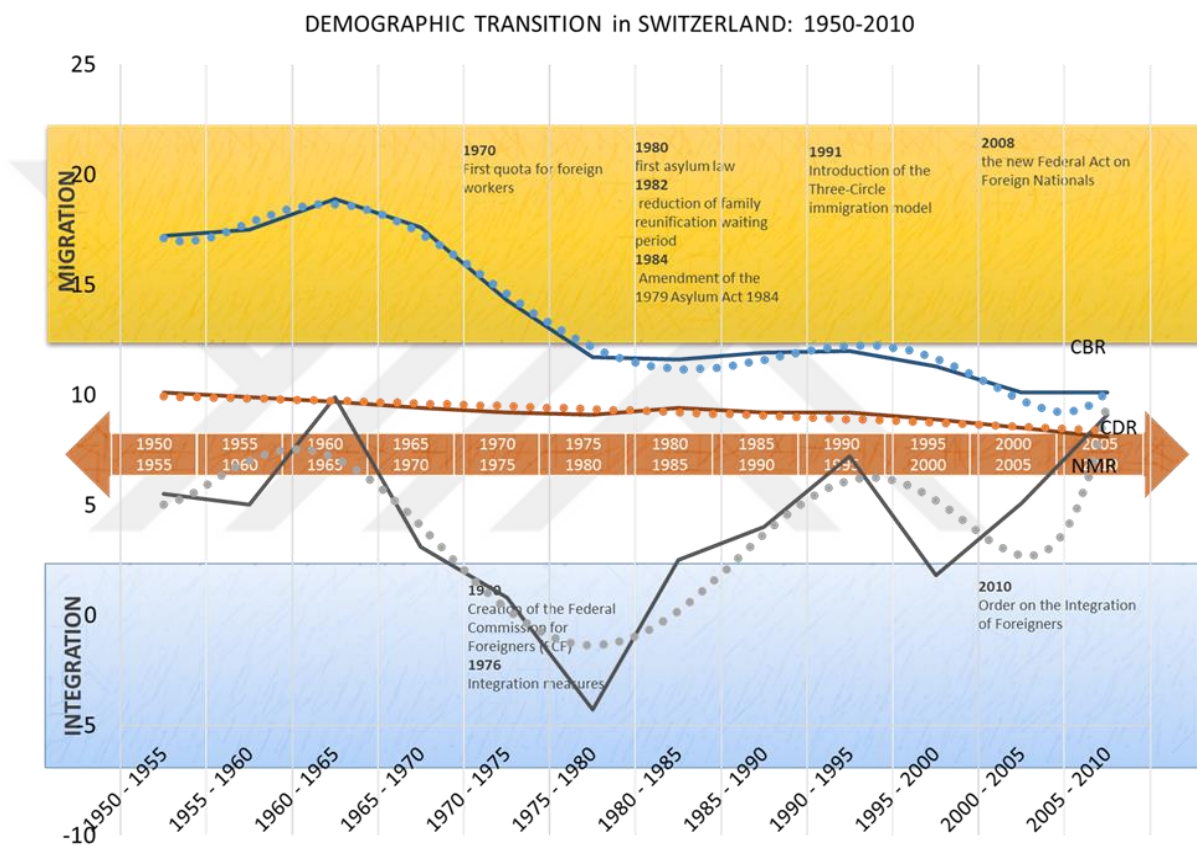
The crude birth rate increased from 17.2 in the period 1950-1955 to 18.9 in the period 1960-1965. This rate has decreased over time. The crude birth rate in 2005-2010 was 10.1 per cent. There has also been a slight decrease in crude mortality rate over time. In the period 1950-1955, it dropped from 10.1 to 8.1 in 2005-2010. According to the net migration rate, Switzerland is a country that receives immigration from the 1950s. It only experienced a sharp decline during the period of 1975-1980 and the net migration rate was -4.3. In the following period, this rate has risen to 2.5, and after a certain period of uplift, it is again sharply decreasing. The net migration rate for 2000-2005 and 2005-2010 periods was 5.1 and 9.1 respectively.

The first quota in Switzerland introduced in 1970 and it was set at level of 20000 foreigners per year. In that period, a less restrictive tool was used to facilitate family reunification. The regulation reduced the compulsory waiting period for family members. The first asylum law was accepted in 1981 and it clarified the procedures for asylum seekers.   The right of required workers increased in 1982, the waiting period decreased from 15 months to 12 months for their family members. The Three-Circle Immigration Model began to be implemented in 1992. It arranged the admission of migrants based on their country of origin. The new Federal Act on Foreign Nationals came into force in 2008 and gave more working rights for migrants.

Furthermore, there are integration policies. In 1970 Commission for Foreigners was established to ease integration of migrants and to solve public concern on immigrants. In 1976, several measures on integration were introduced to encourage accessing social, cultural and educational systems in Switzerland.   Similar to those measure, in 2000 new series of measures were introduced based on the same aim.

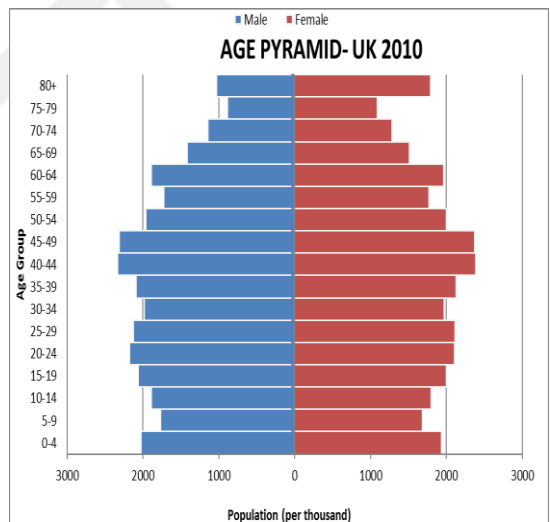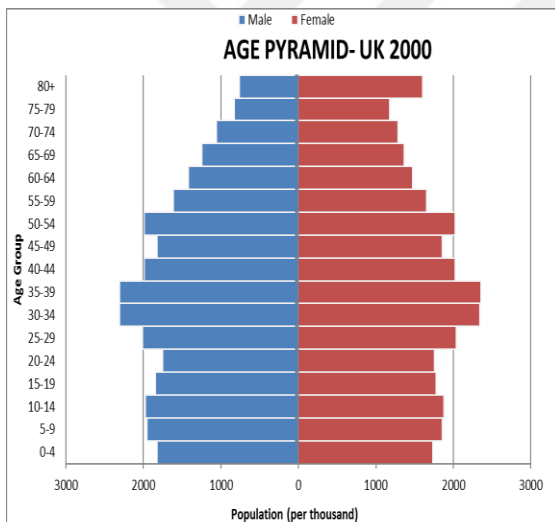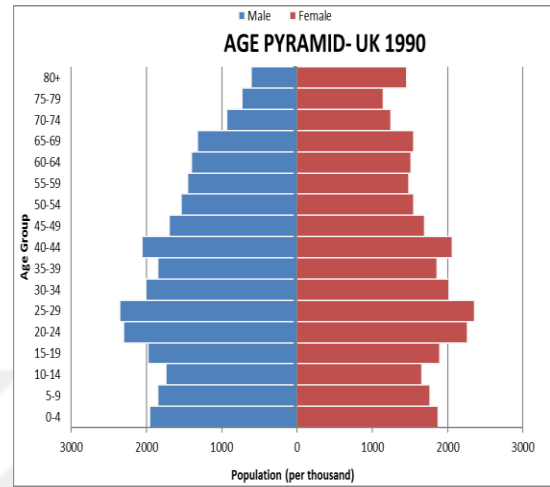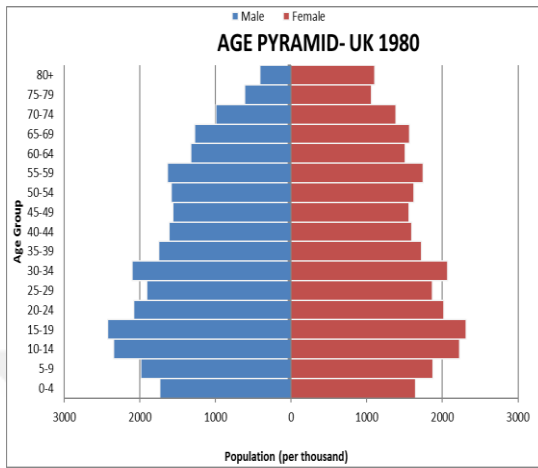Figure A 21: Age Structure Changes in UK; 1960-2010

AGE PYRAMID- UK 1980

AGE PYRAMID- UK 1990

AGE PYRAMID- UK 2000

AGE PYRAMID- UK 2010
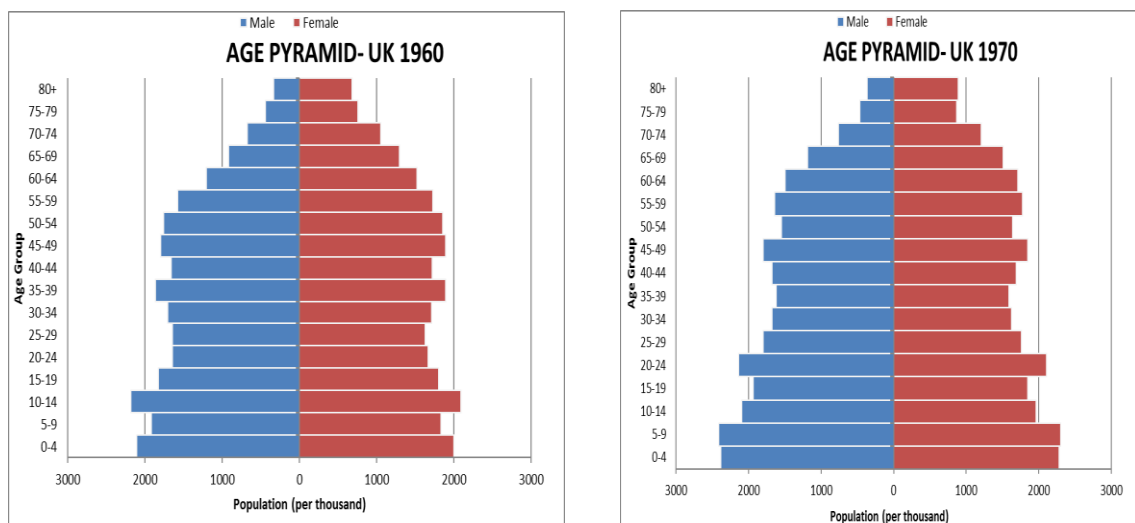
Figure A 22:Demographic Transition and Main Migration Policies in UK, 1950-2010

DEMOGRAPHIC TRANSITION in UK: 1950-2010
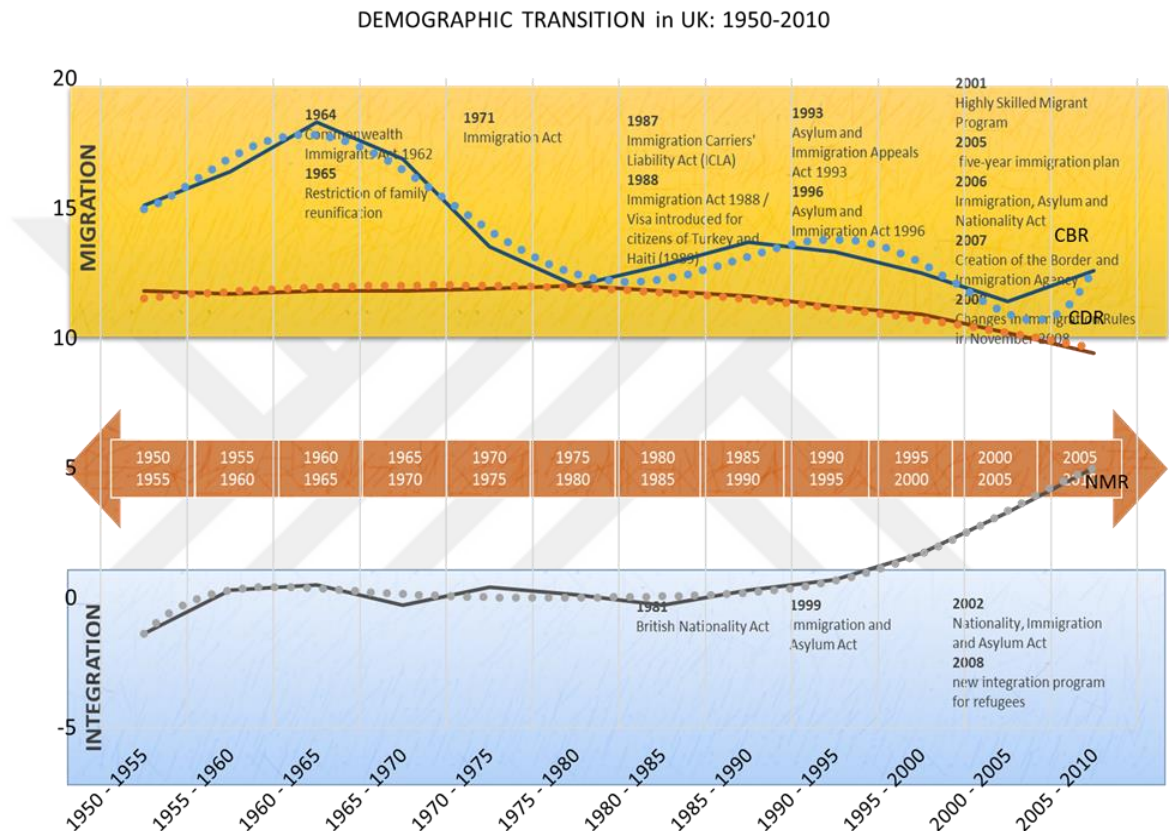
The crude birth rate of the United Kingdom has reached 18.3 from 15.1, and it has begun to decrease by the period 1965-1970. In 1975-1980 and 2000-2005 period, although it showed a more severe decline, it never fell below the level of 11 in 2005. The rough birth rate for 2005-2010 period was calculated as 12.5. The crude death rate was 11 per cent in the period 1995-2000. After this period, it started to decrease and it decreased to 9.4 in 2005-2010 period. When the net migration rate was examined, it reached levels 3.3 and 5 respectively in the following periods, which were below one level until 1995-2000.

In 1962, immigration control was introduced for Commonwealth countries. In those years' family reunification became restricted and immigration control extended to

all countries. In 1980's stricter family reunification conditions were introduced for migrants from Commonwealth. At the end of 1980's, visa requirements for citizens of Turkey and Haiti was introduced. Asylum and Immigration Act introduced the concept of "safe" countries in 1996. The restrictive migration policy changed to other perspective related to "selective openness". In 2000's new scheme for entrepreneurs and innovators came into force and innovators were target group of policy to attract them into country. The less strict policy tools were applied for the target group. Family reunification was granted for innovators' family. Antiterrorism, Crime and Security Act 2001 legislated that suspected terrorists who were immigrants could be detained. In 2001, a new system was introduced, they began to conduct a pilot on point-based system for high-skilled migrants. The UK focused high-skilled workers in 2000's and they gave rights to engineers and scientist to work after the graduation in UK. In the mid of 2000's a new strategy for managing migration was presented. The new point system started to be implemented and introduced strict measures to control borders. In 2005 the naturalization law came into force and introduced "life in UK" test and the required level of English language ability. In 2007 two new institution were established, those were border and immigration agency and migration advisory committee. In the following year, new business visitor visa was introduced.

The integration program includes several legislation and regulations. One of these policies is British Nationality Act 1981 and it removed the right of citizenship to all those born on UK. Another policy is Immigration and Asylum Act 1999 that introduced the National Asylum Support Service (NASS) to manage the measures for supporting asylum seekers and separating them to different areas of the UK. An integration measure in 2000's was related a ceremony because Nationality, Immigration and Asylum Act 2002 forced migrants to speak English to pass the ""life in the UK"" test and it introduced citizenship ceremonies. A less restrictive and new integration program for refugees had been implemented since 2008.
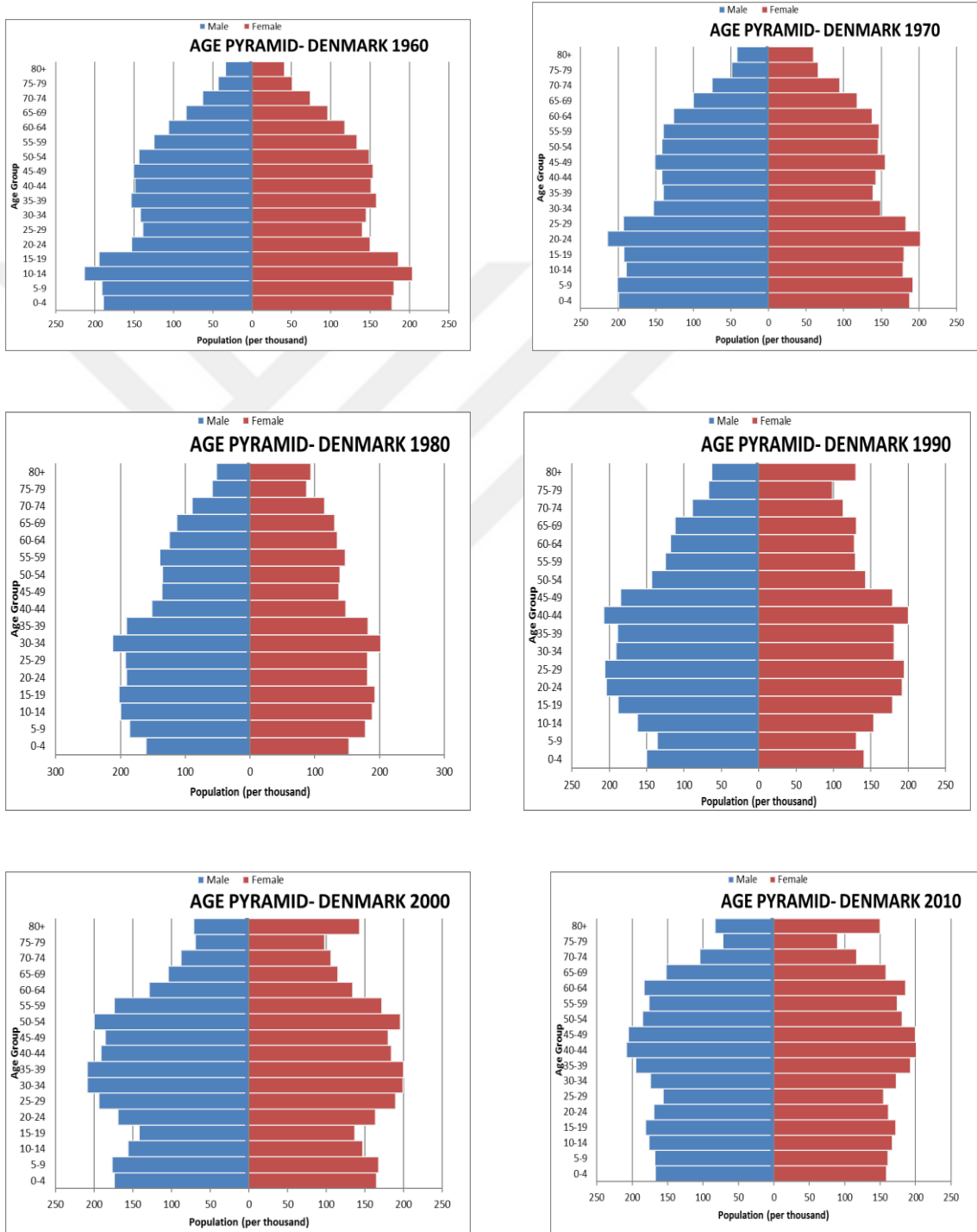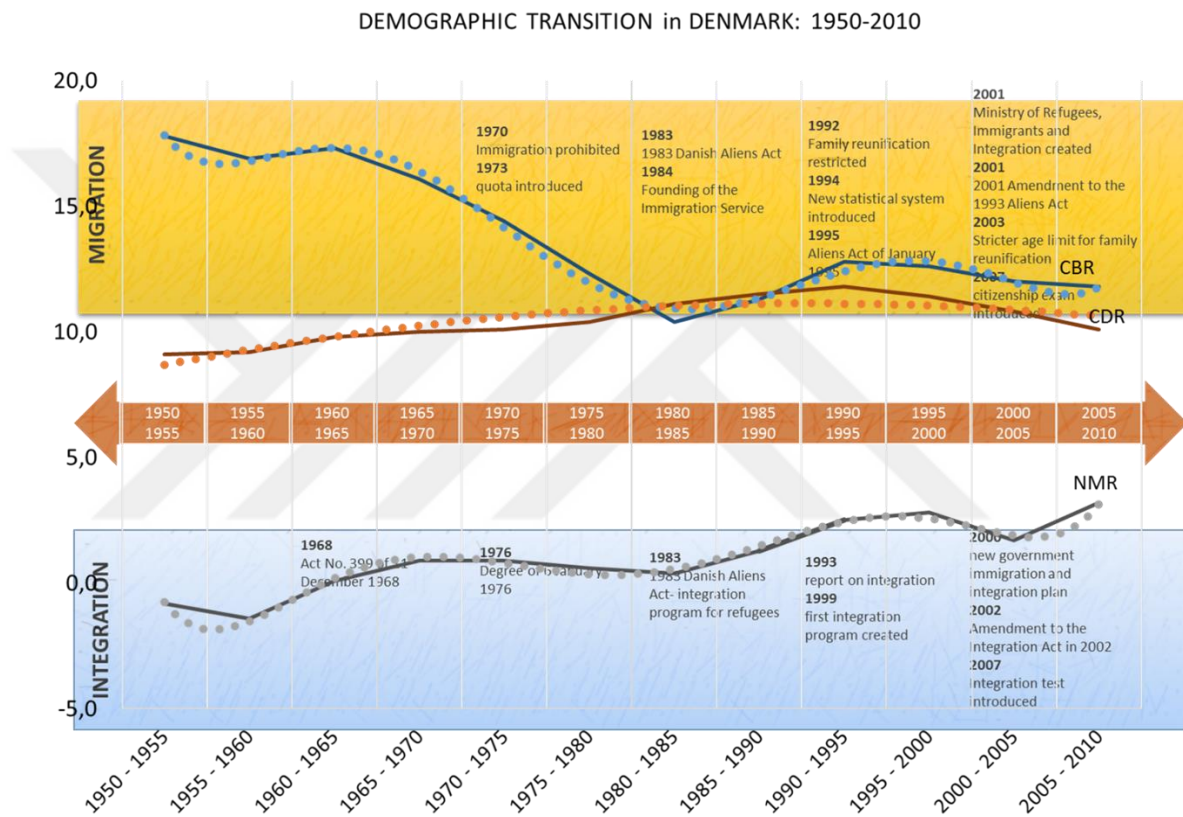
Figure A 23: Age Structure Changes in Denmark; 1960-2010

Figure A 24: Demographic Transition and Main Migration Policies in Denmark, 1950-2010

DEMOGRAPHIC TRANSITION in DENMARK: 1950-2010

In the period 1950-1955, the crude birth rate is at 17.8 per thousand. It took place between 17 and 18 in the 1970-1975 period. 1970-1975 showed a steep decline and dropped from 14.4 in the period to 12.3 in 1975-1980 and to 10.4 in 1980-1985. In the 1980-1985 period, Denmark had the lowest crude birth rate in the last 60 years. After this period, it showed little increases and it reached 11.8 in 2005-2010. In the crude death rate, no significant changes were observed over time. This rate, which was 9.1 in 1950-1955 period, increased to 10.1 in 2005-2010 period. Between the years 1980-2000, it took values at 11 and decreased over time to 10 at that level. There has been no significant migration movement in Denmark until 1985-1990 period. This is the period when the crude birth rate and the crude death rate are tangential. The natural rate of
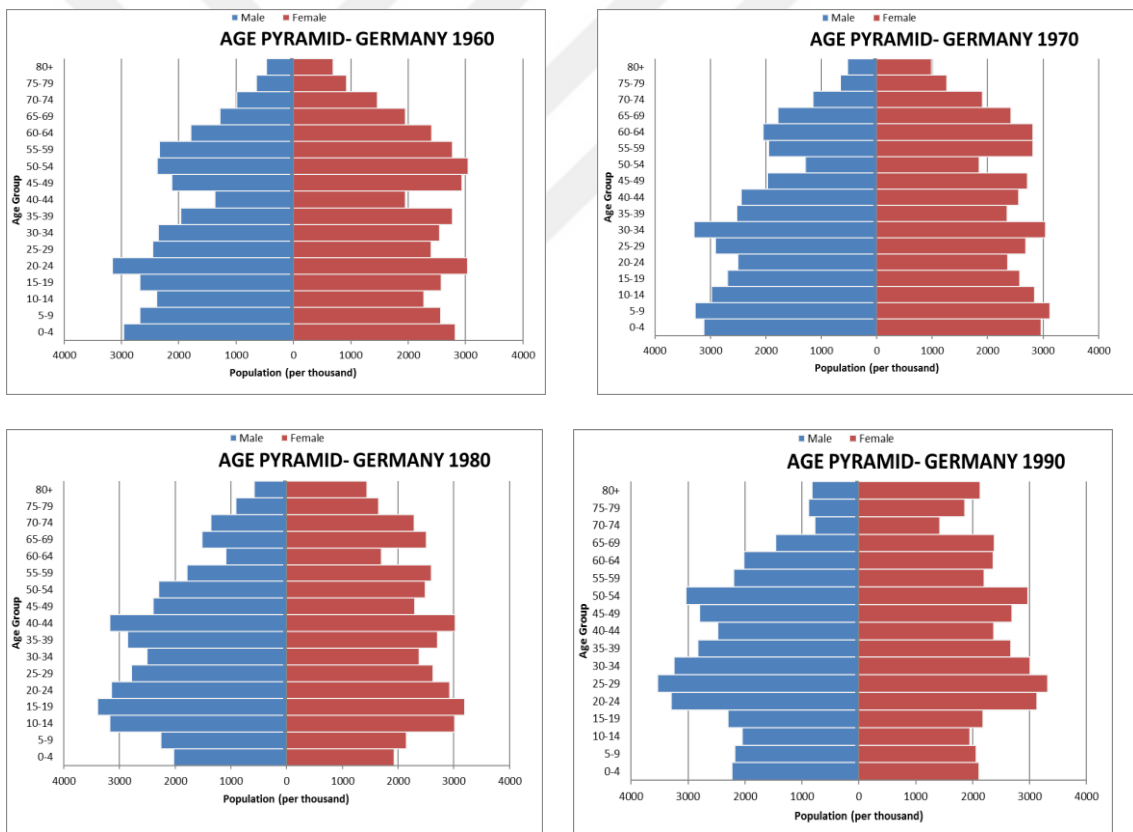
increase was 0.2 in this period. After this period, the net migration rate has reached 2.5 per cent. The net migration rate in 2005-2010 period was 3.2 per cent.

Although the net migration rate in Denmark has increased since 1985, there are a number of immigration and integration policy arrangements. Since the 1970s, strict immigration policies have been seen. In 1970, immigration was prohibited and quato system was introduced in those years. Due to the restrictive migration policies, European workers had the right to family reunification with the arrangement; E.C. Decree N° 1612/68. In the next period, they decided to reverse the tightening migration policy. 1983 Danish Aliens Act granted low-skilled workers from third countries work and residence permits for workers with specialized skills. The Act also gave the right of family reunification. Additionally, Immigration Service was founded in those years. In the following period, a family reunification was restricted by a regulation. The migration policy became restrictive in 1990's. Aliens Act of January 1995 introduced a process to enable applications to be quickly rejected if there was insufficient information. One other restrictive migration tool was DNA tests for family reunification and implemented in 1997. Ministry of Refugees, Immigrants and Integration was established in 2001. Amendments to the Aliens Act introduced strict policies in 2000's and increased the requirements for residency permit and lowered the age limit for family reunification. A citizenship test was introduced in 2006 and began to be implemented in 2007.

The integration policies in 1960's provided less restrictive regulations for migrants. In 1968, Act No.399 provided that *" upbringing in Denmark was considered sufficient to create the link necessary for the acquisition of citizenship".* Degree of 6 January 1976 provided social rights for foreigners. An assistance system for refugees and asylum seekers was introduced by 1983 Danish Aliens Act. Another integration policy in 1980's was the financial support of government for foreigners to attend high school or other learning institutions. A government report was prepared on integration and immigration to Denmark in 1993 and the following year a detailed integration plan was announced for labor market. Additional to those plans, first integration program was

introduced in 1999 and a package of legislation on immigration and integration in Denmark to provide the loyalty of new migrants to Danish culture and to accelerate the integration of them came into force in 2000. Strict migration policy tools were implemented as integration policies in 2000's such as strict rules for naturalization, decreased social benefits for new immigrants and introduction of integration test for residency permit.

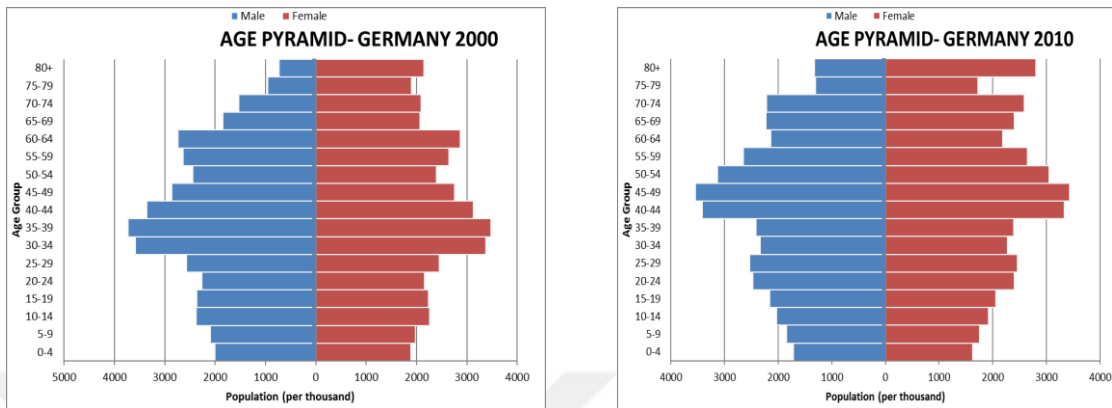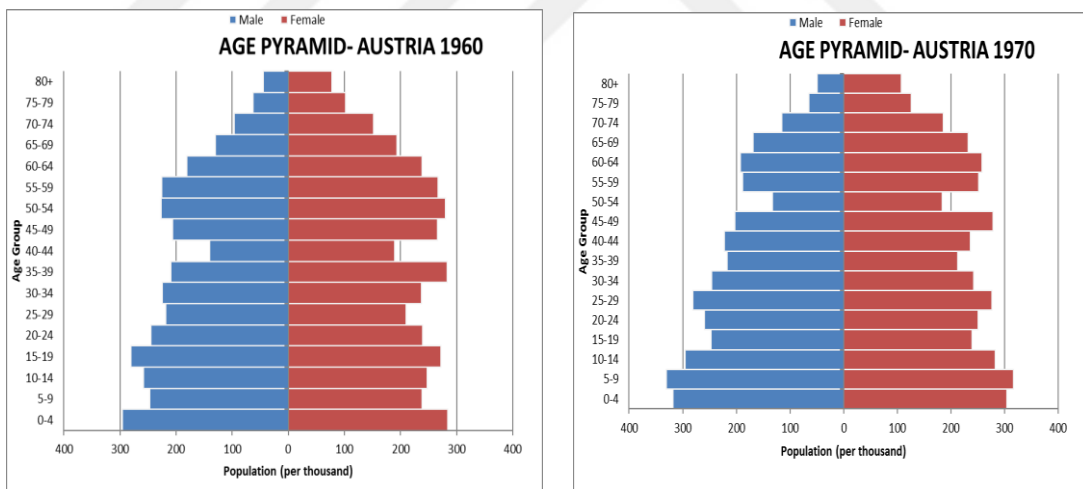Figure A 25: Age Structure Changes in Germany; 1960-2010

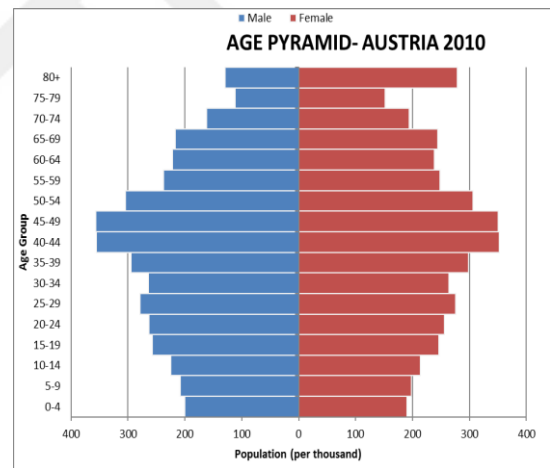Figure A 26: Age Structure Changes in Austria; 1960-2010

AGE PYRAMID- AUSTRIA 1980

AGE PYRAMID- AUSTRIA 1990
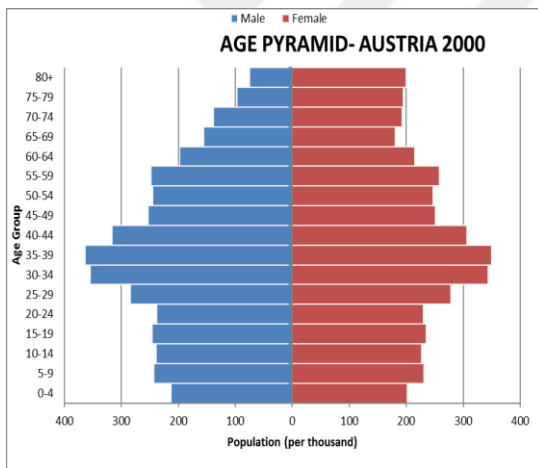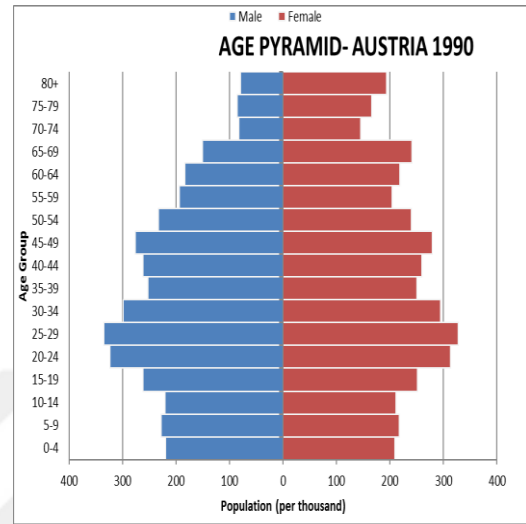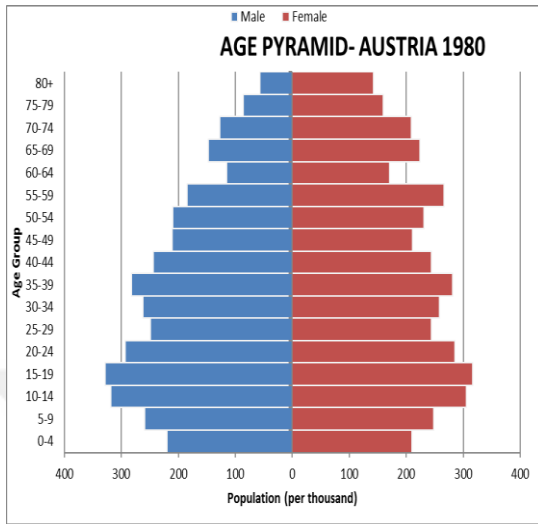

AGE PYRAMID- AUSTRIA 2000

AGE PYRAMID- AUSTRIA 2010

Figure A 27: Demographic Transition and Main Migration Policies in Austria, 1950-2010

DEMOGRAPHIC TRANSITION in AUSTRIA: 1950-2010
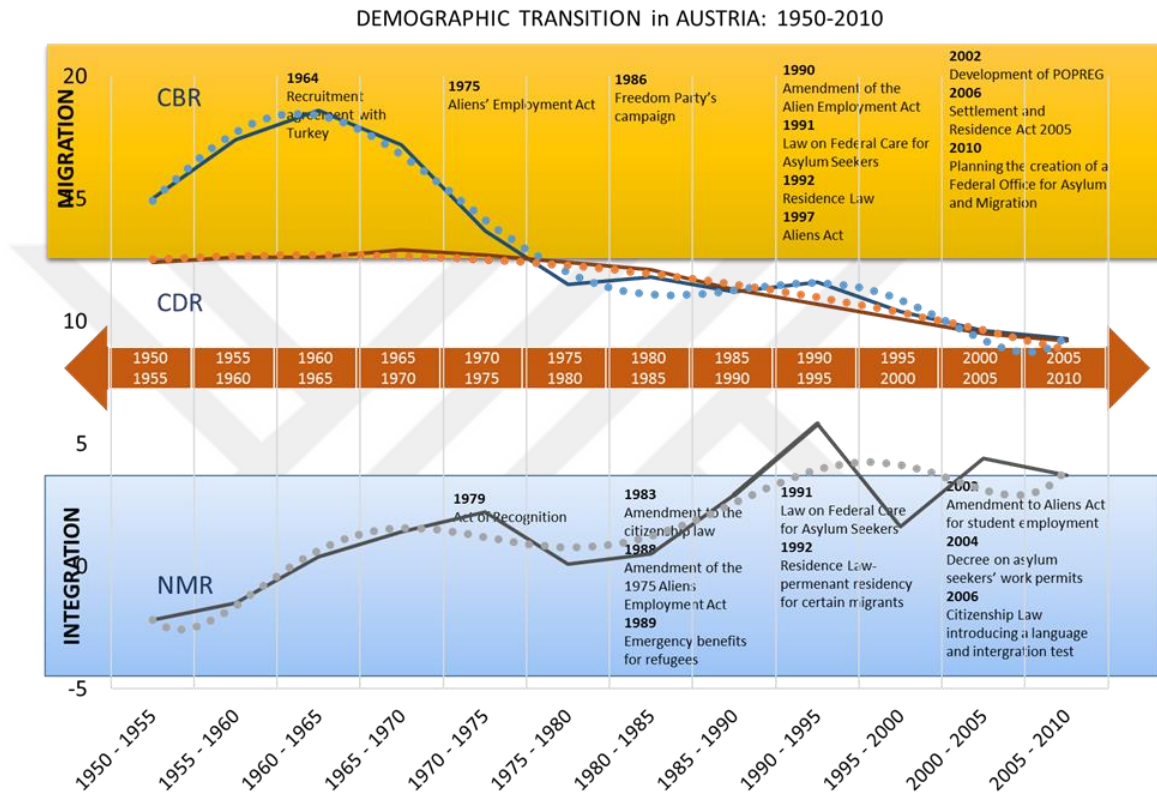
Austria's rough birth rate was at the level of 15 in the 1950s and reached 18.6 in the period of 1960-1965. During the period 1965-1970, the crude birth rate has been 17.2, but after that period it has experienced a sharp decline. It has fallen to 13.7 level before and fluctuated around 11 by the year 2000. Between 2005 and 2010, it was 9.3. On the other hand, the rate of crude deaths has declined over time, but these declines are not severe. In the period 1950-1955, the number of deaths in Austria per thousand per person decreased from 12.4 in the period 2005-2010 to 9.2. From time to time the crude death rate has exceeded the crude birth rate. It is expected that the net migration rates will increase due to the tendency of the population to decrease in these periods. The net migration rate on the chart shows that this expectation is realized.

According to the graph, Austria was a country that received immigration until 1960, but after 1965 it became a country with positive net migration rates. Negative values observed until 1960 may have been caused by a relatively high crude birth rate. The most noticeable point in the above chart is that small fluctuations in the crude death rate cause a relatively high change in the net migration rate. A slight decrease in the rate of crude deaths was observed in 1970-1975, a decrease of almost 2 per thousand in net migration rate was observed. During the increase in crude death rate in 1990-1995, there was a change of 2.9 in net migration rate. The net migration rate was 3.7 per thousand for 2005-2010 period.

As a result of these changes in the net migration rate, changes have been observed in immigration policies as described below. Austria is another country signing a labor agreement with Turkey. "For import of low-skilled labor agreement between Austria and Turkey started in 1962, but the agreement was signed in 1964. In 1973 there were 230.000 guest worker in Austria. In 1974, foreign worker had right to vote in work council, but they did not have right to be elected. Aliens' Employment Act came into force in 1975 and regulated the admission of foreigners to the Austrian labor market through a step-wise access to work permits. The 1979 Act of Recognition recognized the first Viennese Islamic Religion Community as the representative of Muslims in Austria. With amendment to the citizenship law, men and women had equal in passing on citizenship to spouses and children. In 1986 the extreme rights politicized the immigration issues in public. Refuges and holders of permanent work in Austria had the accession to Notstandshilfie which covered emergency benefits. Meanwhile, immigrants in Austria reached to reached 713.000 people in 1994. That high-level migrant stock provided new arrangement about migration policies. In 1990's asylum seekers could work and a regularization was introduced for illegally employed foreigners. Additionally, a maximum stock of foreign workers was announced. Similarly, quota on residence permit was established by Residence Law 1992. In 1997, with Aliens Act 1997 it was introduced restricted standards to family reunification. According to law, only children under 14 years were allowed to follow their parents. A new population

register system (POPREG) was developed in 2002 to estimate the population and migration stock. In that year, new immigrants were restricted and only high-skilled migrants are target group for Austria. Additionally, 2002 Amendment to the Aliens Act gave right students to take up part time employment to cover their living expenses. In 2006 a financial standard was introduced that based the minimum wage for family reunification. A minimum age for entering Austria for spouse raised from 18 to 21.

APPENDIX B: GRAPHICS ON DEPENDENT AND INDEPENDENT

VARIABLES AND TABLES OF COLLINEARITY [32]

Figure B 1: The Changes at The Share of Immigrants Born in Turkey to The Population of The Five European Countries Closest to Turkey & The Changes at Relative Gross National Income Per Capita: 1960-2010

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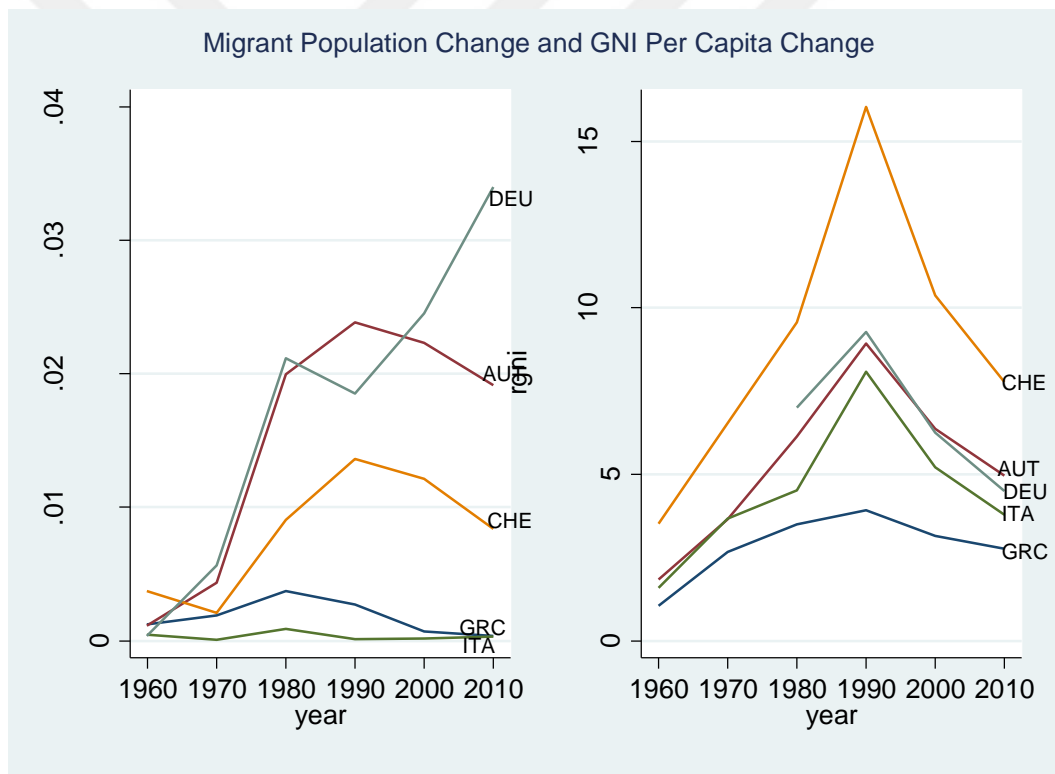
[32] In this appendix, mtotdep_d, mimr_d, me0_d, mtfr_d, murb_d, meduc_d, munemp_d, mgni_perc_d represent mean of total depedency, mean of infant mortality rate, mean of life expectancy at birth, mean of total fertility rate, mean of urbanization rate, mean of education index, mean of unemployment rate, mean of gross national income per capita in destination countries respectively.

Figure B 2: The Changes at The Share of Immigrants Born in Turkey to The Population of The Five European Countries Closest to Turkey & The Changes at Relative Population Size: 1960-2010

Figure B 3: The Changes at The Share of Immigrants Born in Turkey to The Population of The Five European Countries Closest to Turkey & The Changes at Relative Development Level: 1960-2010

Figure B 4: The Changes at The Share of Immigrants Born in Turkey to The Population of The Five European Countries Closest to Turkey & The Changes at Total Dependency: 1960-2010

Figure B 5: The Changes at The Share of Immigrants Born in Turkey to The Population of The Second Group Five European Countries & The Changes at Relative Gross National Income Per Capita: 1960-2010

Figure B 6: The Changes at The Share of Immigrants Born in Turkey to The Population of The Second Group Five European Countries & The Changes at Relative Population Size: 1960-2010
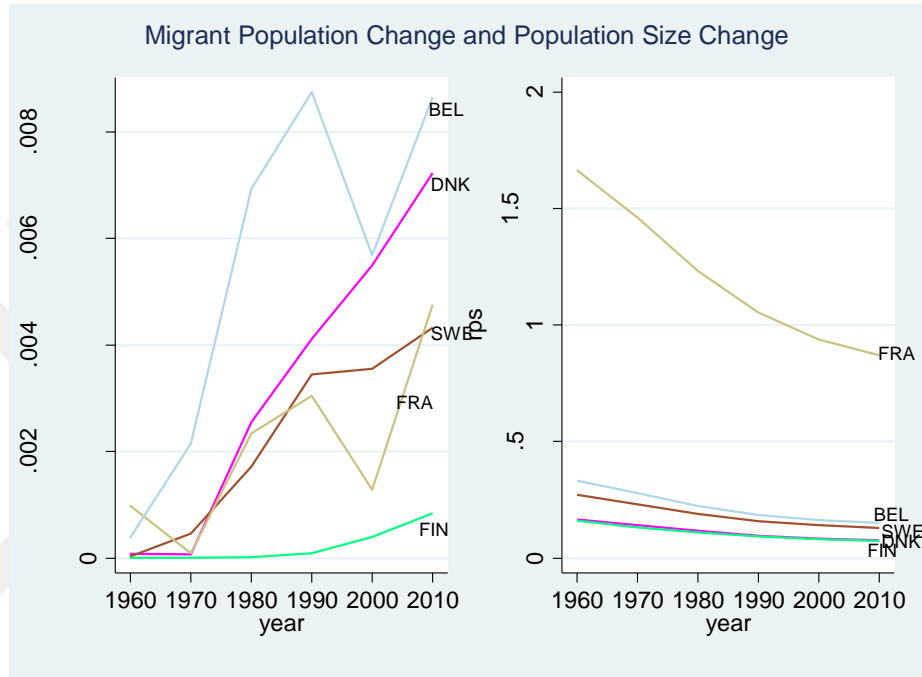
Figure B 7: The Changes at The Share of Immigrants Born in Turkey to The Population of The Second Group Five European Countries & The Changes at Relative Development Level: 1960-2010
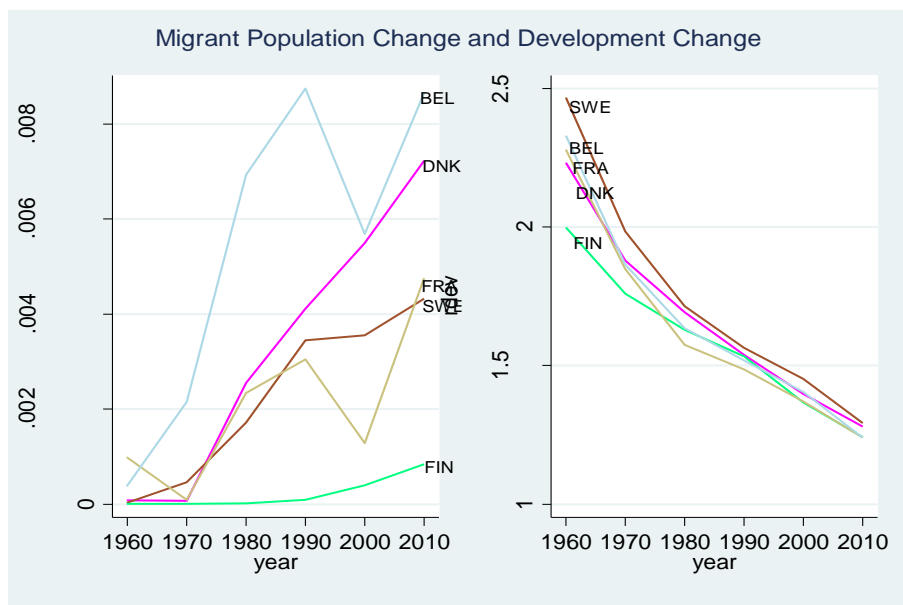
Figure B 8: The Changes at The Share of Immigrants Born in Turkey to The Population of The Second Group Five European Countries & The Changes at Relative Total Dependency Ratio: 1960-2010
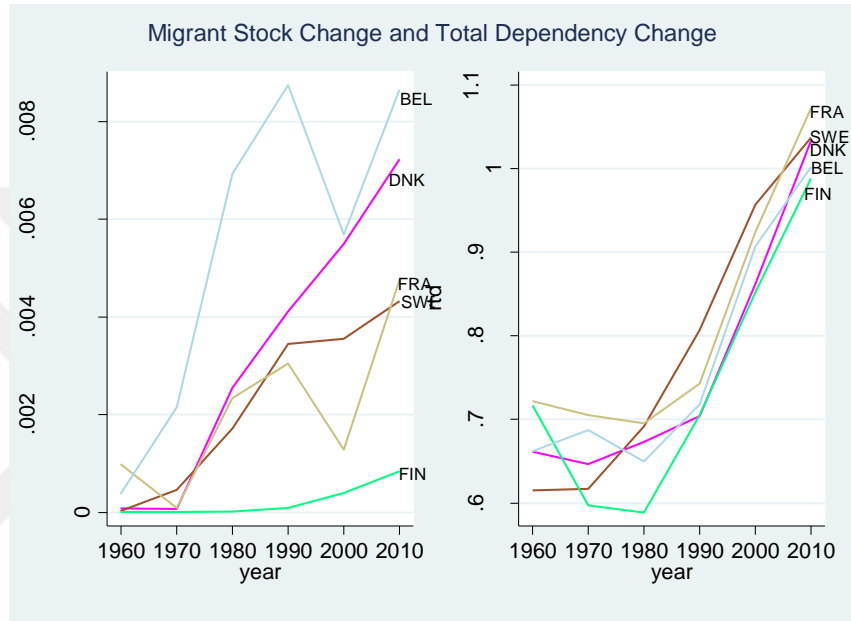
Figure B 9: The Changes at The Share of Immigrants Born in Turkey to The Population of The Third Group Five European Countries & The Changes at Relative Gross National Income Per Capita: 1960-2010
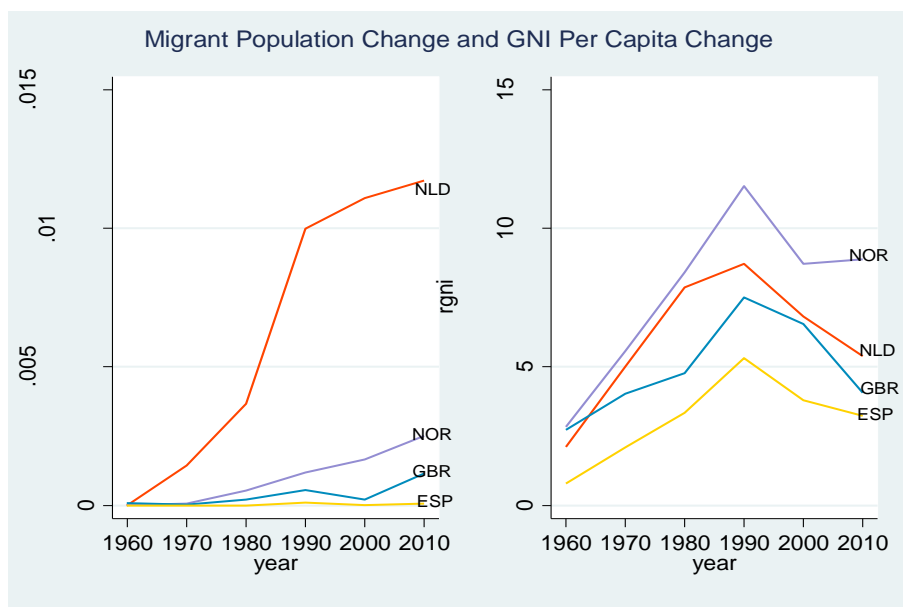
Figure B 10: The Changes at The Share of Immigrants Born in Turkey to The Population of The Third Group Five European Countries & The Changes at Relative Population Size: 1960-2010
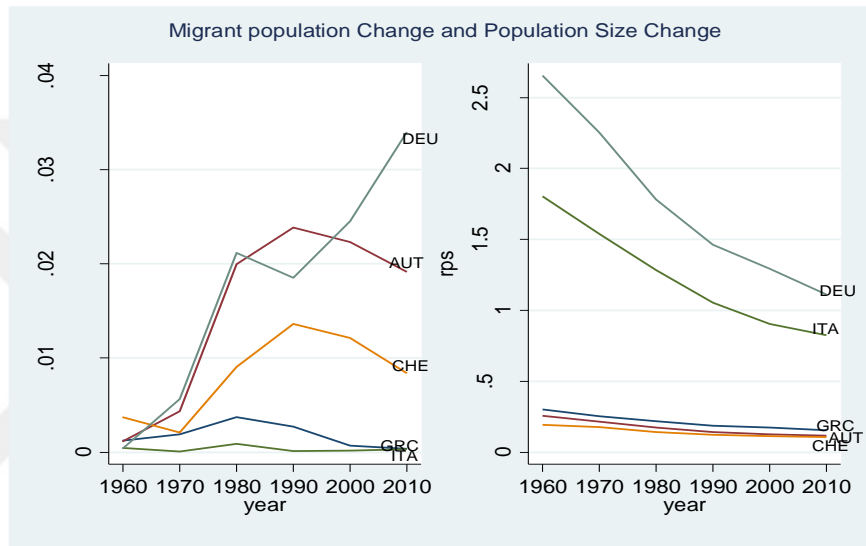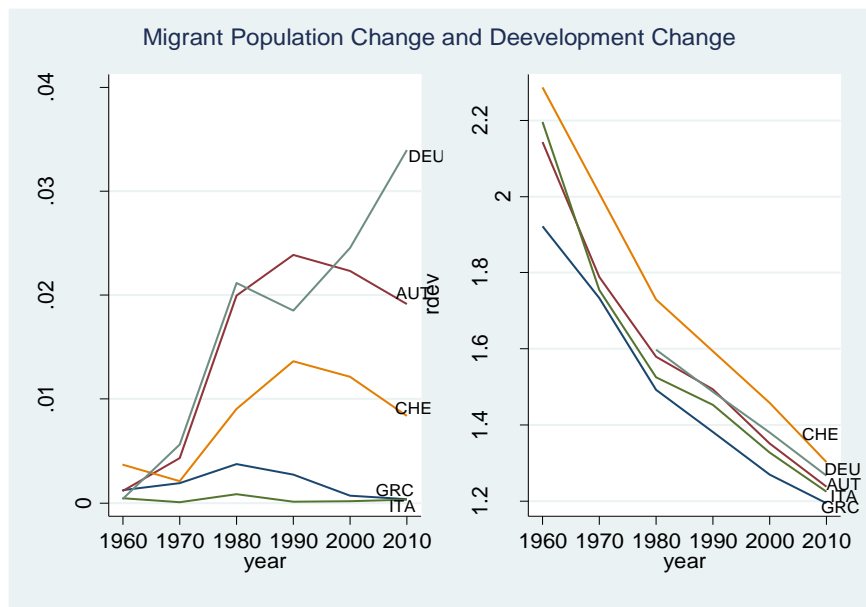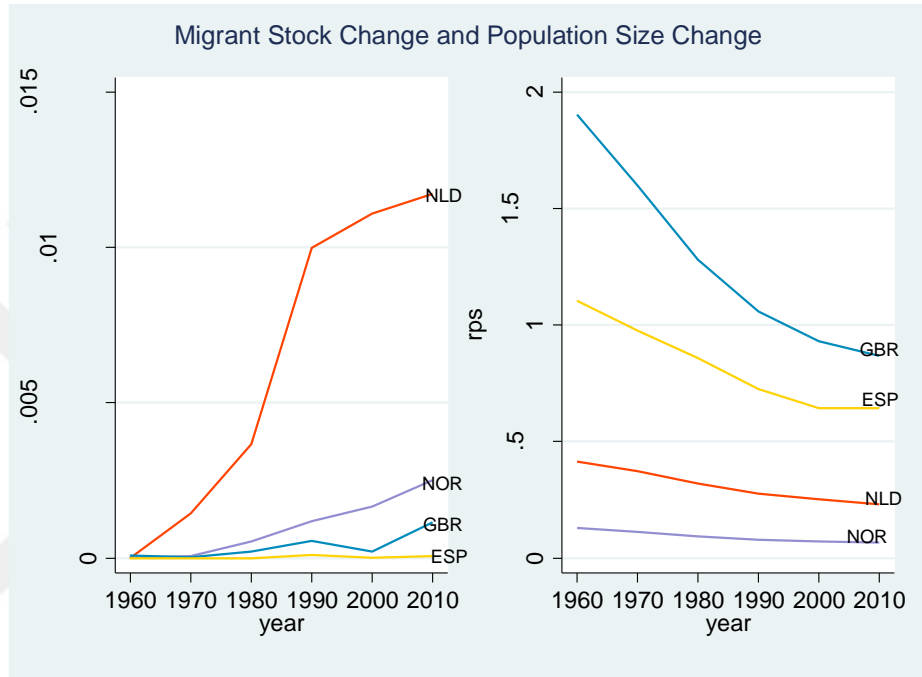

Figure B 11: The Changes at The Share of Immigrants Born in Turkey to The Population of The Third Group Five European Countries & The Changes at development Level: 1960-2010
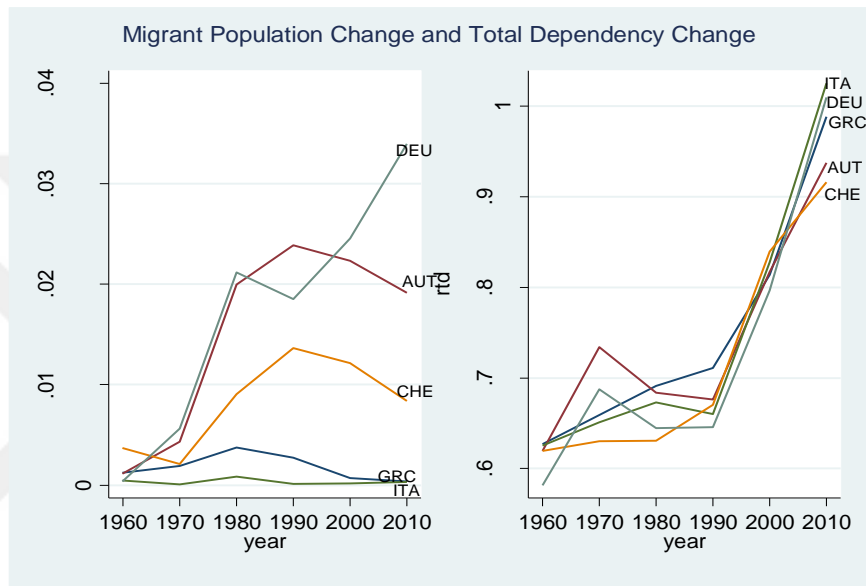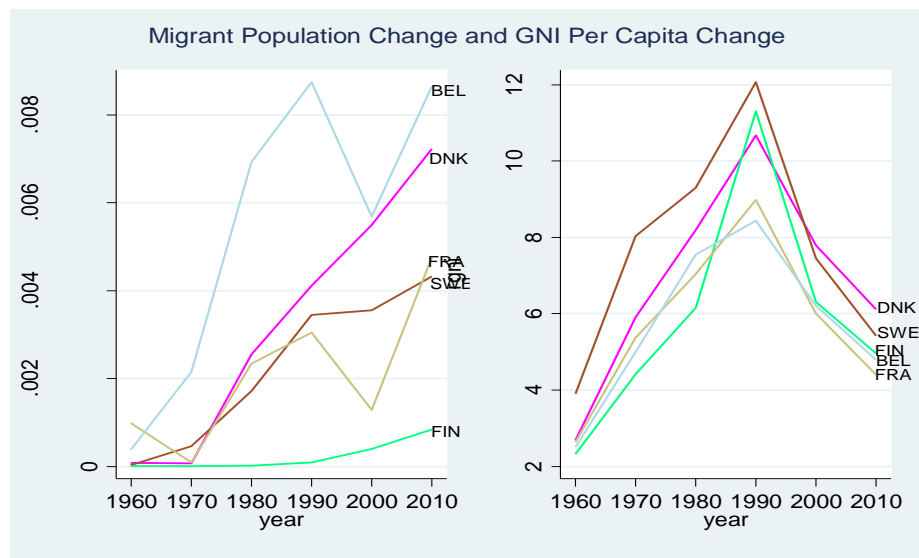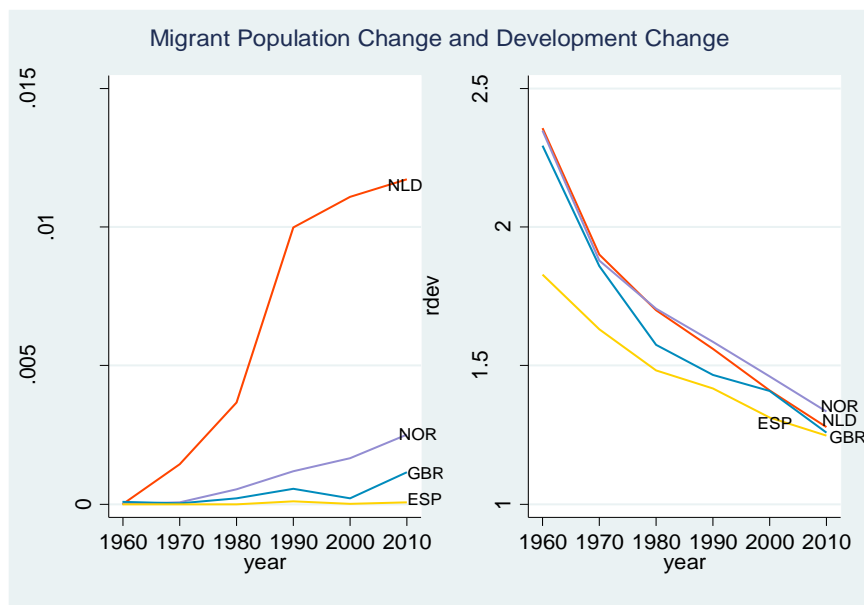
Figure B 12: The Changes at The Share of Immigrants Born in Turkey to The Population of The Third Group Five European Countries & The Changes at Relative Total Dependency Ratio: 1960-2010
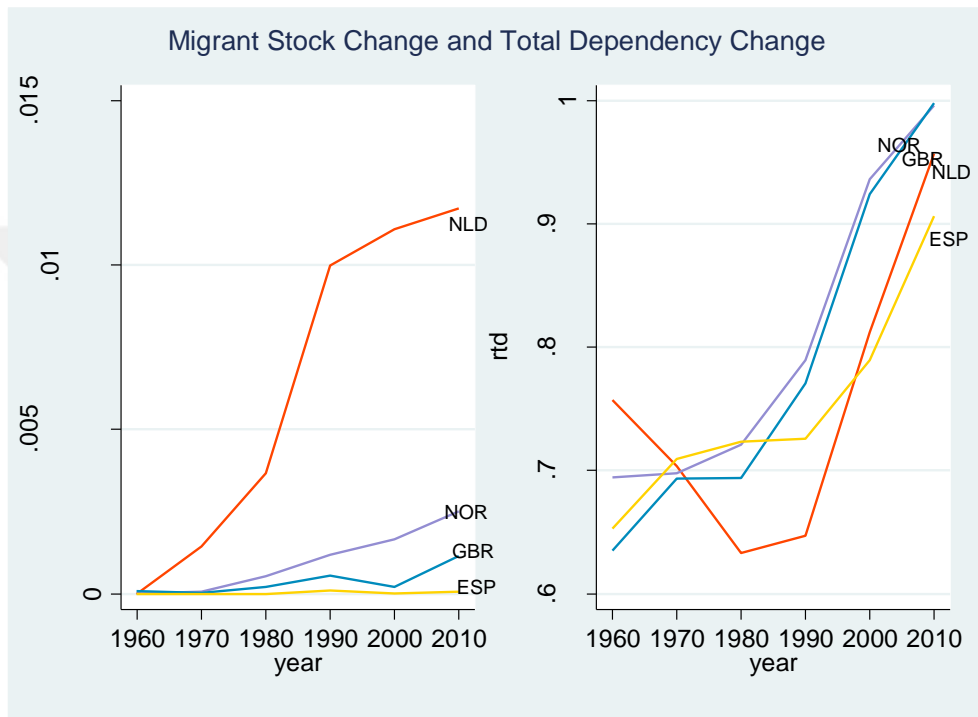
Table B 1: Pairwise Correlations, 1960-2010

	rpc	rtd	rgni	ru	dis
rpc	1.0000				
rtd	0.1951	1.0000			
rgni	-0.0626	0.0901	1.0000		
ru	0.7538*	0.1551	-0.1564	1.0000	
dis	0.1811	0.0902	0.1854	0.1519	1.0000

Table B 2: Variance Inflation Factors

```
Collinearity Diagnostics


                         SQRT                    R-
          Variable   VIF  VIF   Tolerance    Squared
          -------------------------------------------------

               rpc  2.38  1.54   0.4205      0.5795
               rtd  1.05  1.03   0.9494      0.0506
              rgni  1.09  1.04   0.9178      0.0822
                ru  2.39  1.55   0.4180      0.5820
               dis  1.08  1.04   0.9240      0.0760

          -------------------------------------------------

          Mean VIF  1.60
```

APPENDIX C: GRAPHICS ON CORRELATION BETWEEN DEPENDENT

AND INDEPENDENT VARIABLES [33]

Figure C 1: The Relationship Between Mean of Migrant Stock and Total Dependency Ratio

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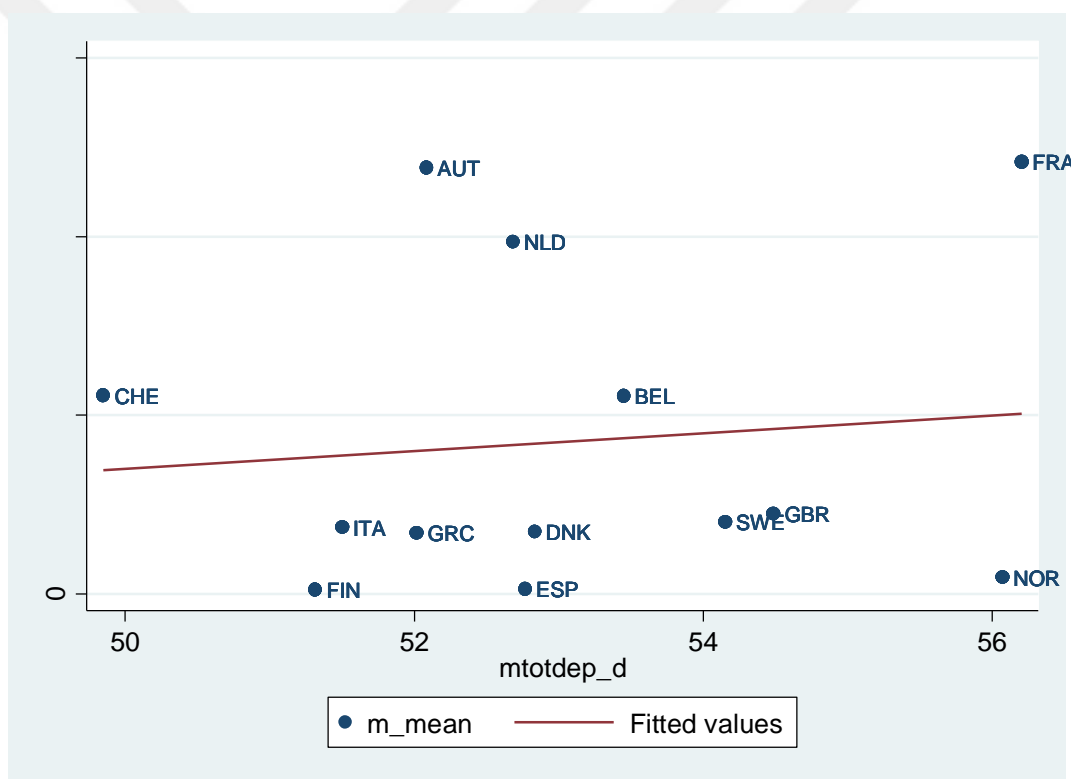
[33] In this appendix, mage_d, imr_d, e0_d, tfr_d, urb_d, educ_d, unemp_d, gni_perc_d, dev_d represent mean age, infant mortality rate, life expectancy at birth, total fertility rate, urbanization rate, education index, unemployment rate, gross national income per capita and development level in destination countries respectively.

Figure C 2: The Relationship Between Mean of Migrant Stock and Infant Mortality Rate

Figure C 3: The Relationship Between Mean of Migrant Stock and Life Expectancy at Birth
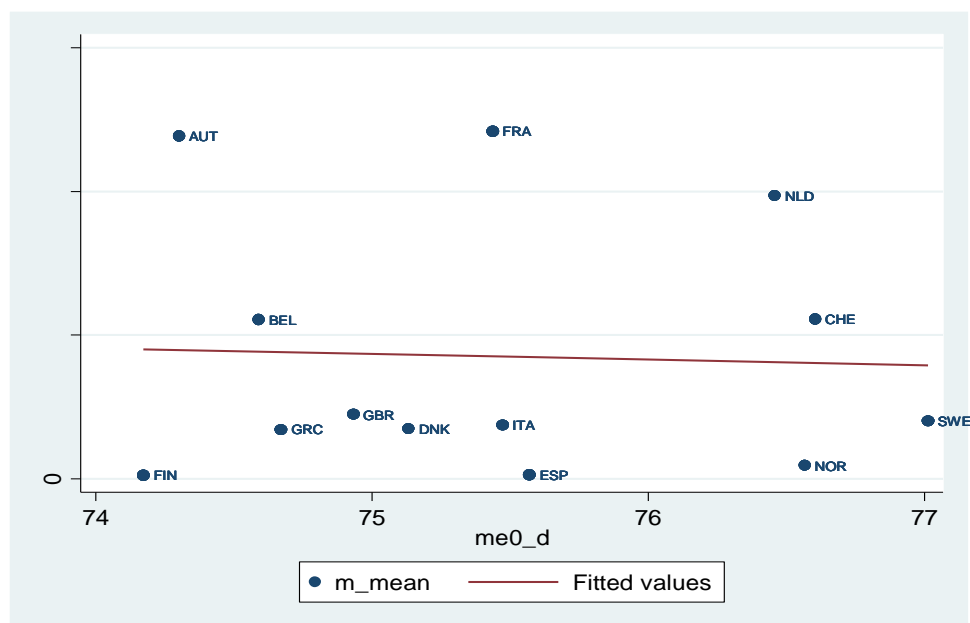
Figure C 4: The Relationship Between Mean of Migrant Stock and Total Fertility Rate
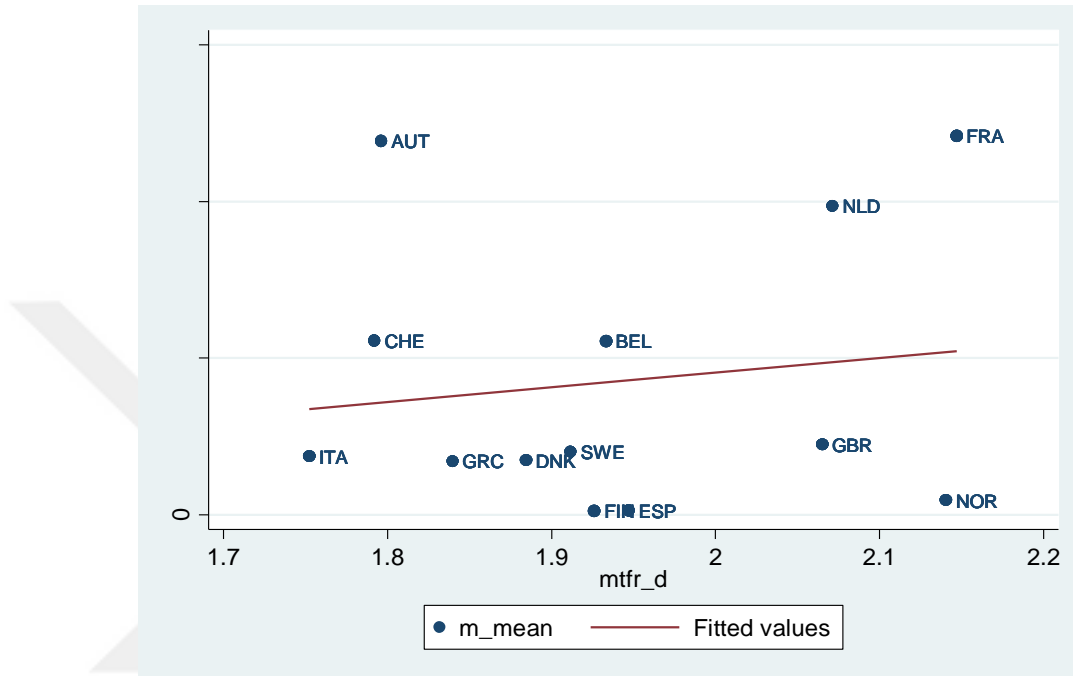
Figure C 5: The Relationship Between Mean of Migrant Stock and Annual Change Rate of Urbanization
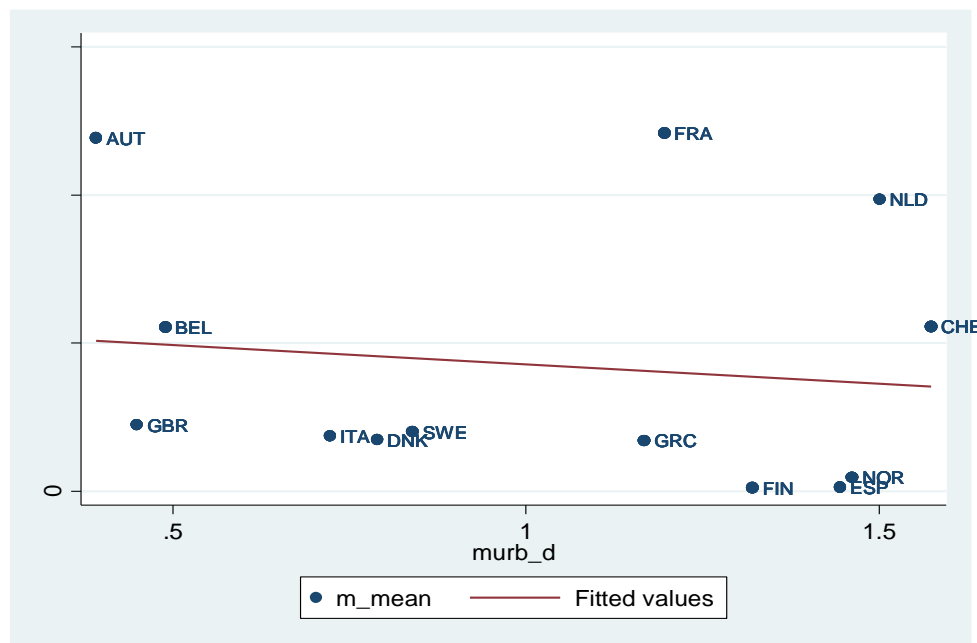
Figure C 6: The Relationship Between Mean of Migrant Stock and Education Index
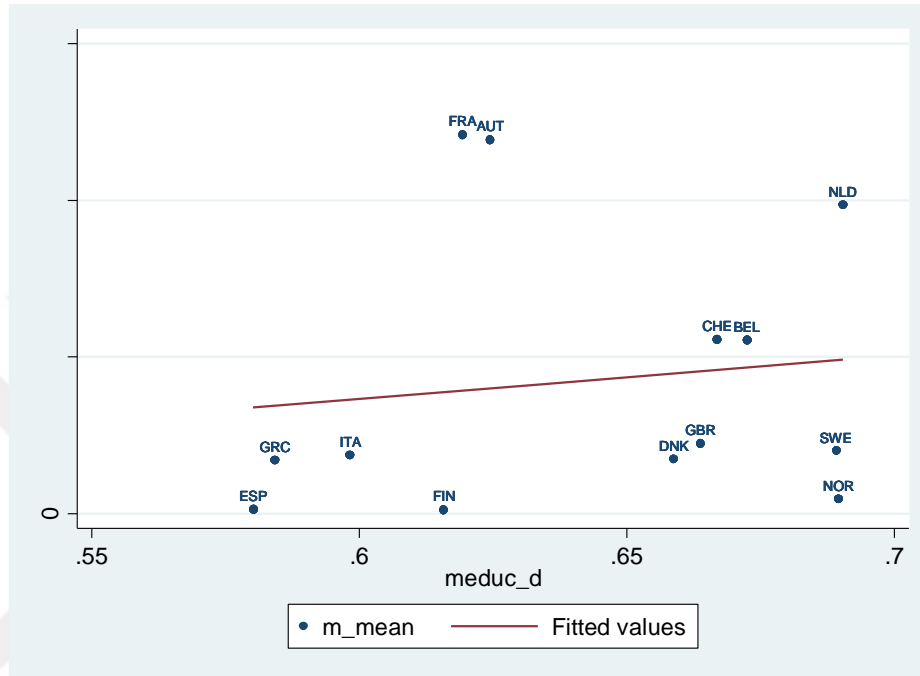
Figure C 7: The Relationship Between Mean of Migrant Stock and Unemployment Rate
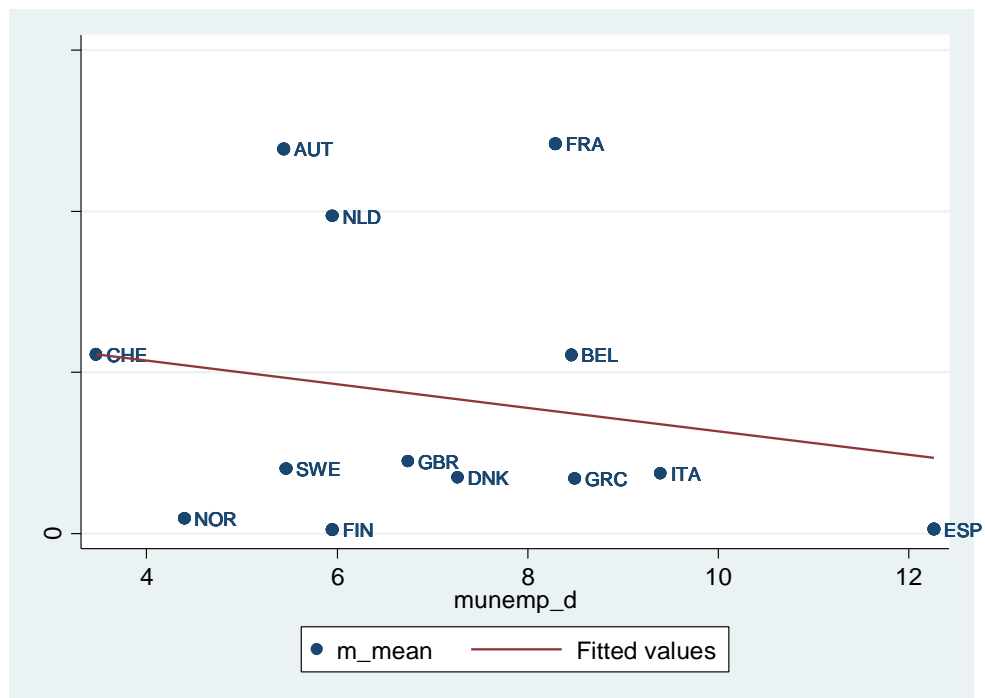
Figure C 8: The Relationship Between Mean of Migrant Stock and Per Capita Income
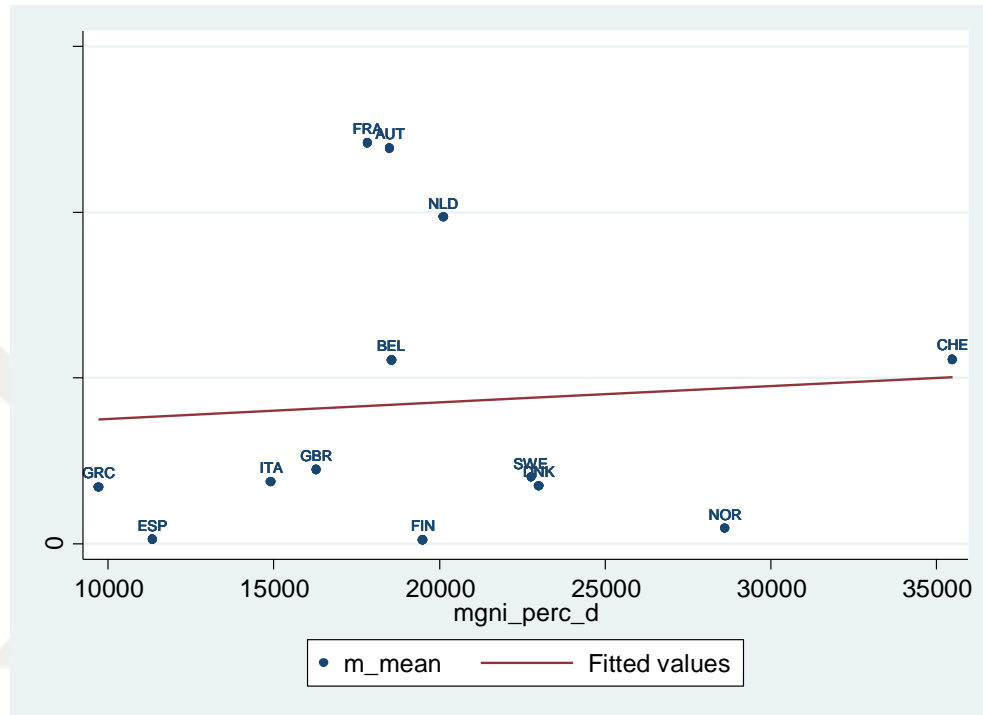
Figure C 9: The Relationship Between Mean of Migrant Stock and Development Level
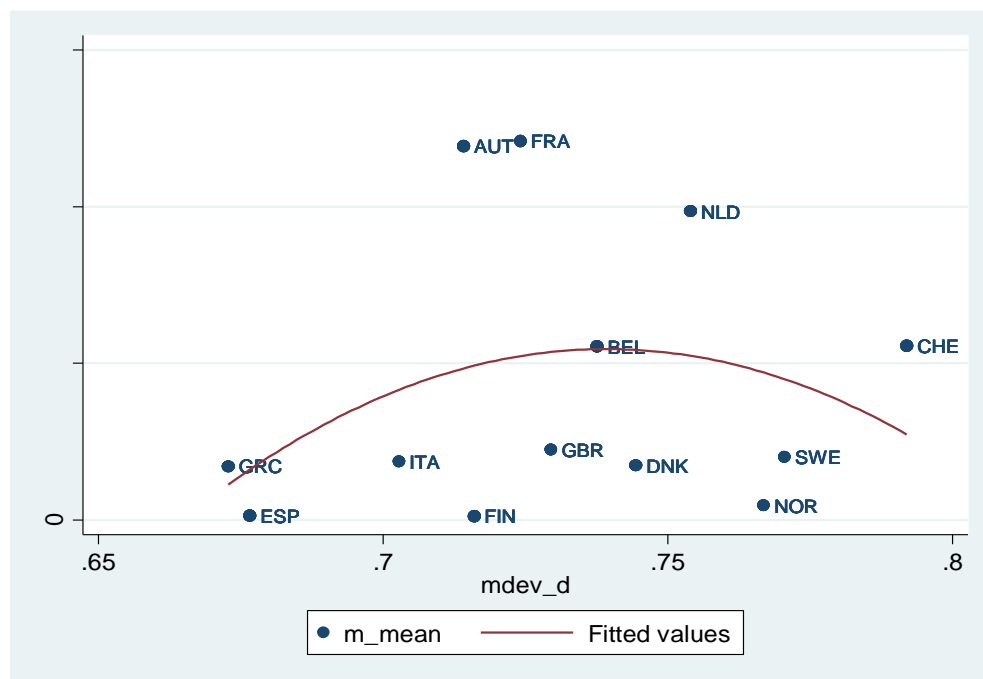
APPENDIX D: THE COMPARISON OF DEMOGRAPHIC AND SOCIO-

ECONOMIC FACTORS IN THE DESTINATION COUNTRIES

Figure D 1: Median Age in Destination Countries; 1960-2010
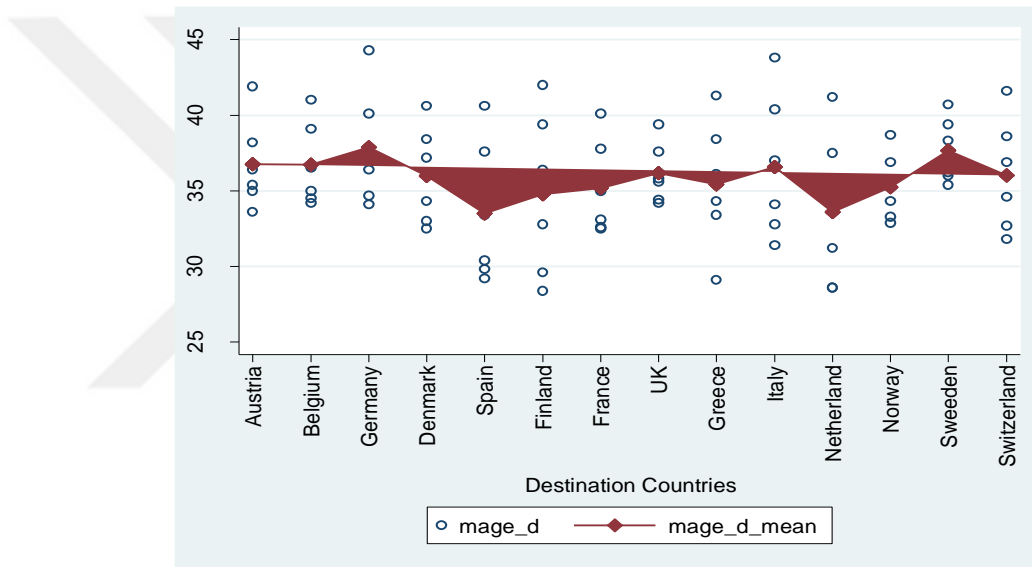
Figure D 2: Infant Mortality Rates in Destination Countries; 1960-2010
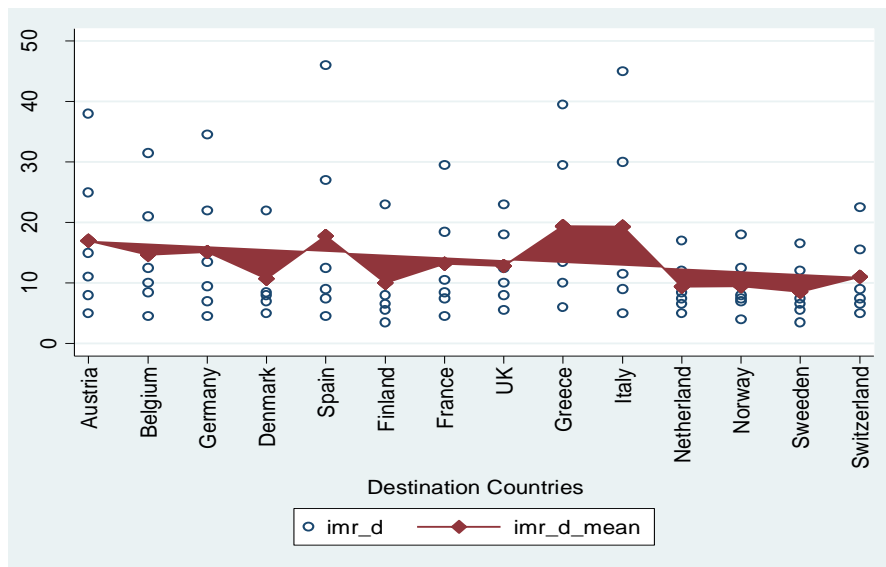
Figure D 3:Life Expectancy at Birth in Destination Countries, 1960-2010
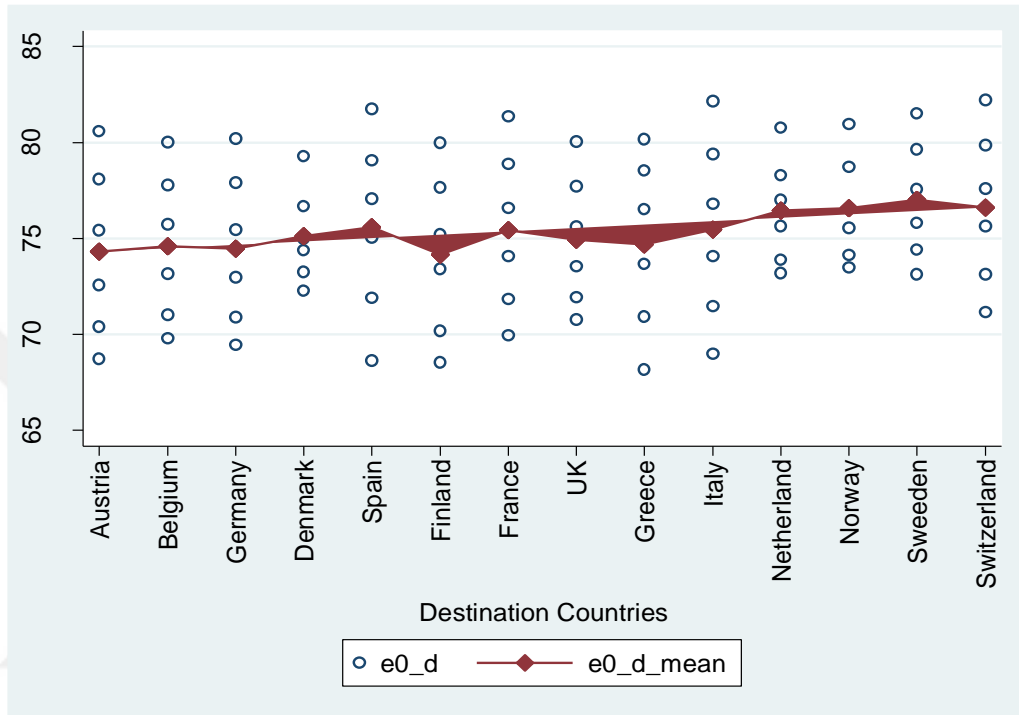
Figure D 4: Total Fertility Rate in Destination Countries; 1960-2010
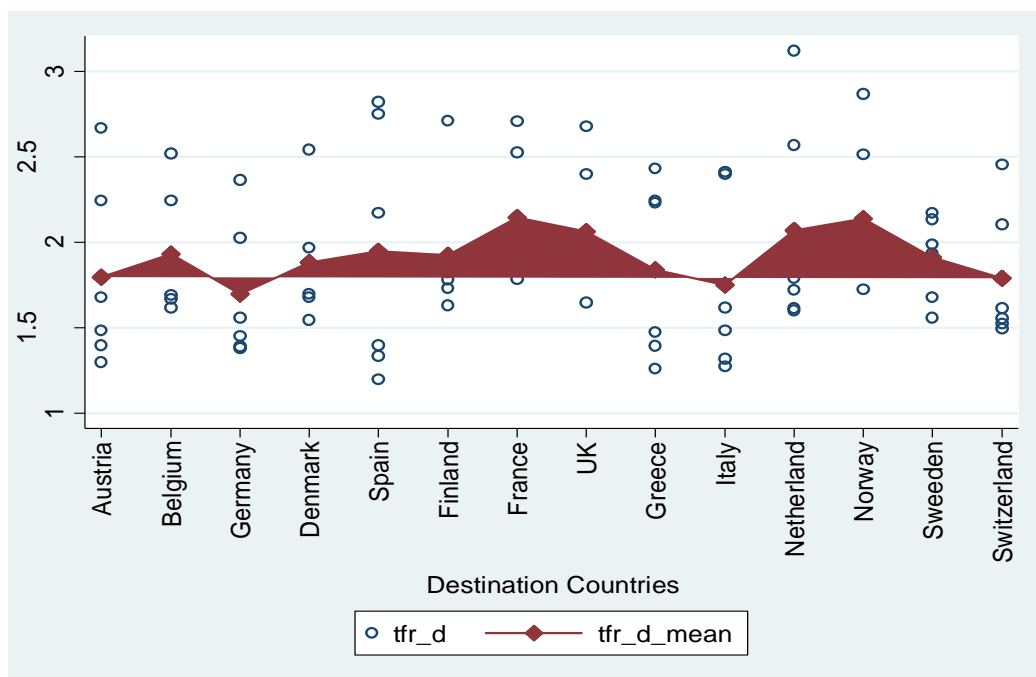
Figure D 5: Urbanization Rate in Destination Countries; 1960-2010
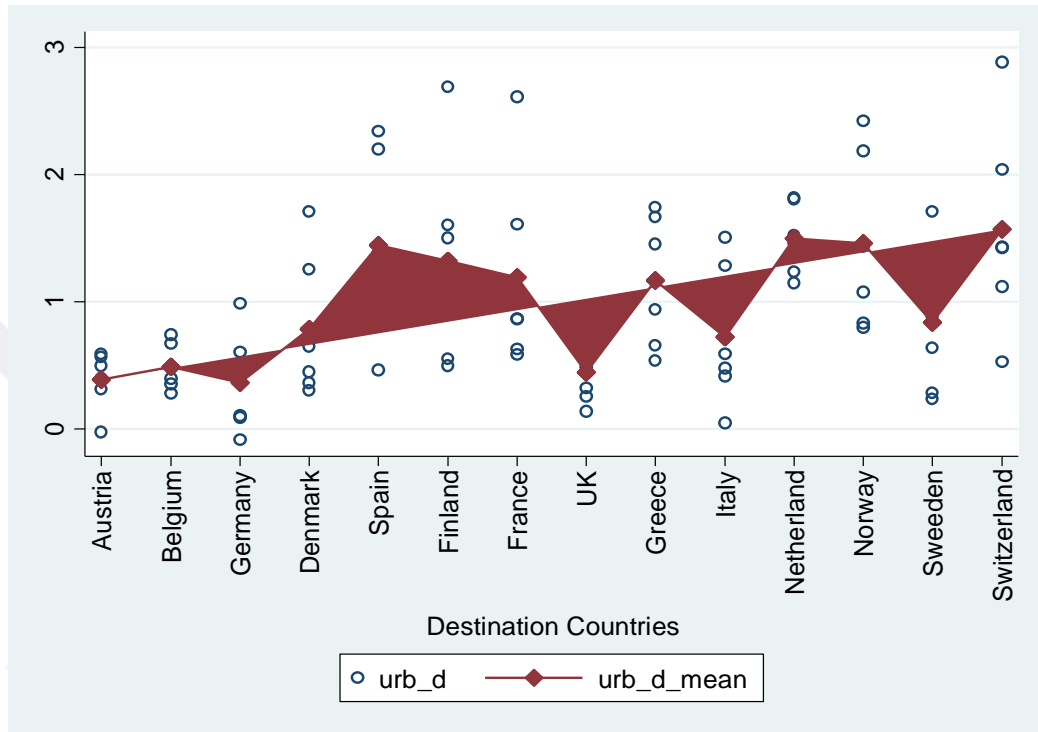
Figure D 6: Education Index in Destination Countries; 1960-2010
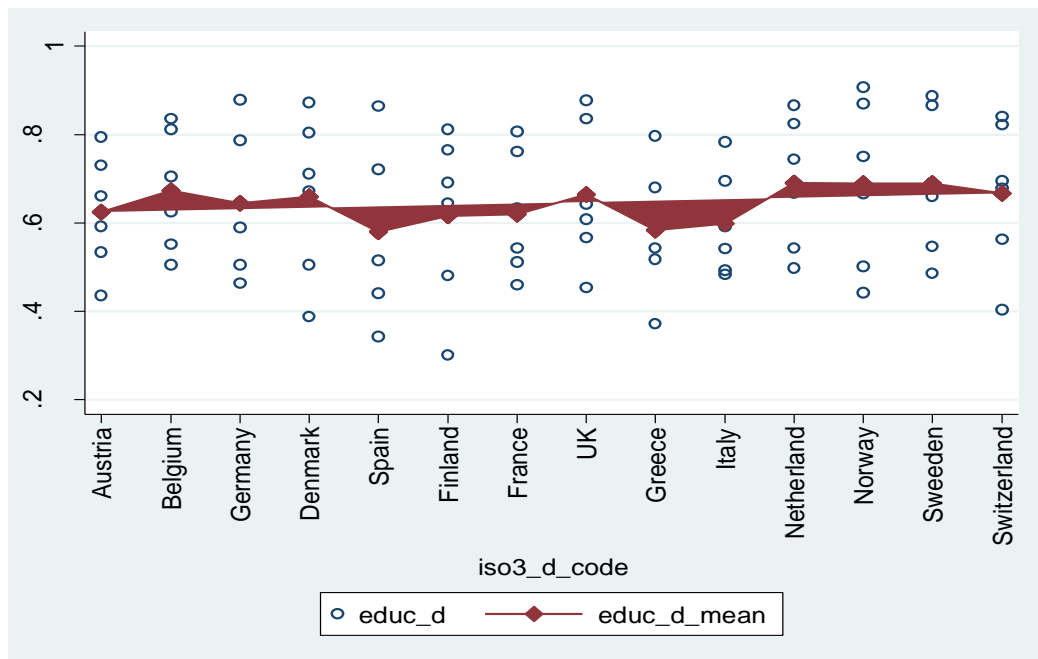
Figure D 7: Unemploymnet Rate in Destination Countries; 1960-2010
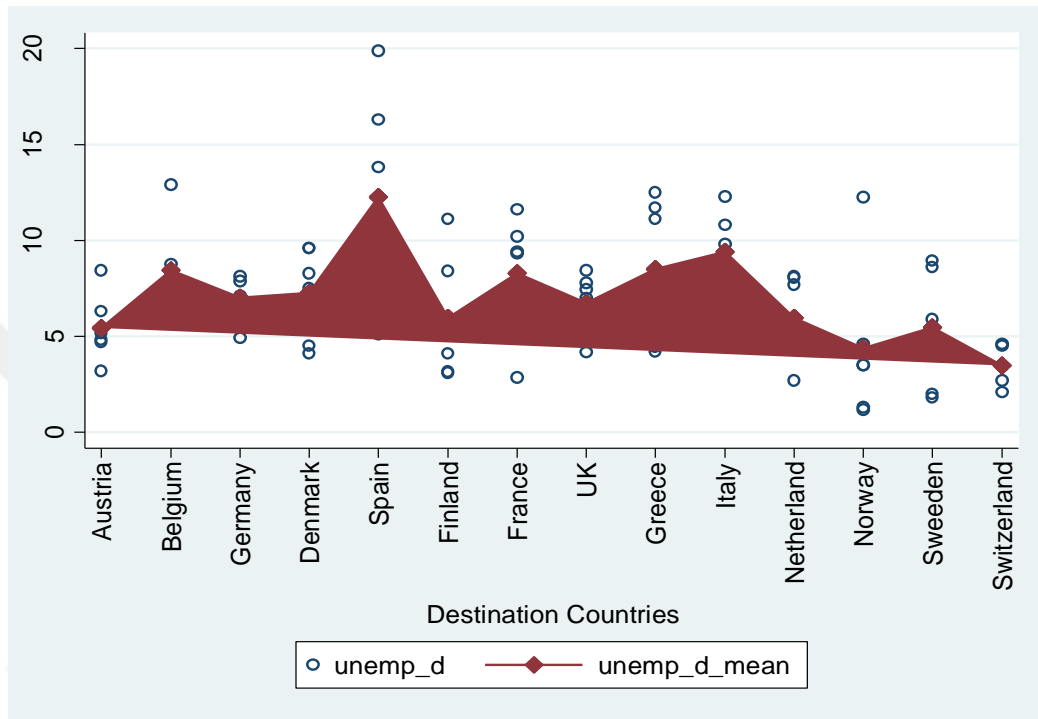
Figure D 8: Gross National Income Per Capita in Destination Countries; 1960-2010
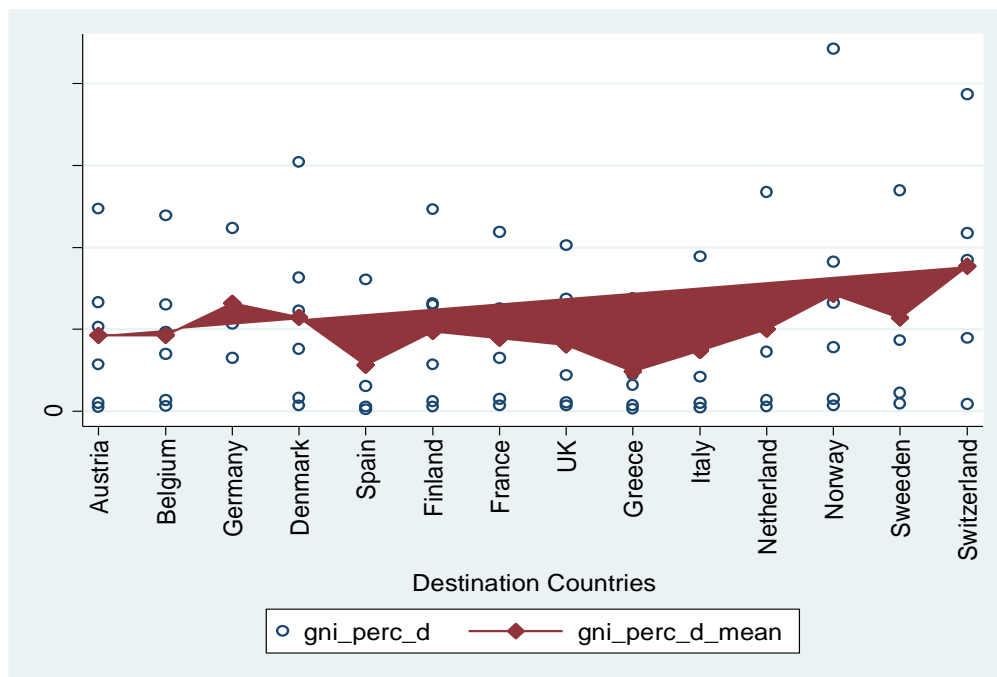
Figure D 9: Developmet Index in Destination Countries; 1960-2010
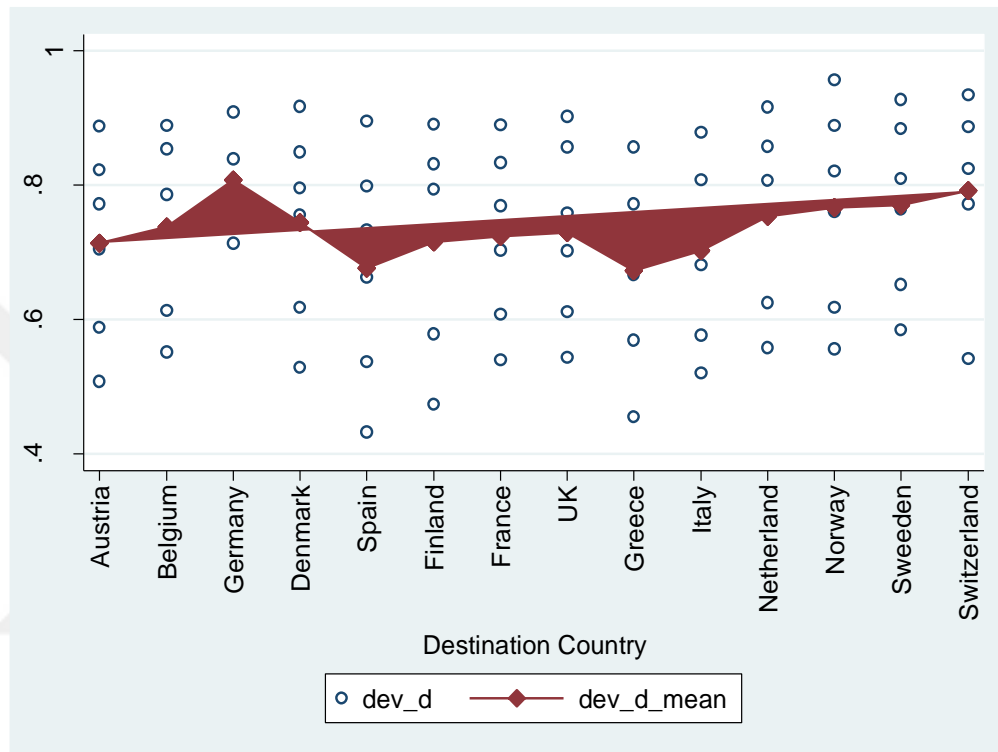
APPENDIX E: THESIS/ DISSERTATION ORIGINALITY REPORT AND INTELLECTUAL PROPERTY RIGHTS DECLARATION

Enstitü tarafından onaylanan lisansüstü tezimin/raporumun tamamını veya herhangi bir kısmını, basılı (kağıt) ve elektronik formatta arşivleme ve aşağıda verilen koşullarla kullanıma açma iznini Hacettepe Üniversitesine verdiğimi bildiririm. Bu izinle Üniversiteye verilen kullanım hakları dışındaki tüm fikri mülkiyet haklarım bende kalacak, tezimin tamamının ya da bir bölümünün gelecekteki çalışmalarda (makale, kitap, lisans ve patent vb.) kullanım hakları bana ait olacaktır.

Tezin kendi orijinal çalışmam olduğunu, başkalarının haklarını ihlal etmediğimi ve tezimin tek yetkili sahibi olduğumu beyan ve taahhüt ederim. Tezimde yer alan telif hakkı bulunan ve sahiplerinden yazılı izin alınarak kullanılması zorunlu metinlerin yazılı izin alınarak kullandığımı ve istenildiğinde suretlerini
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 o **Tezimin/Raporumun tamamı dünya çapında erişime açılabilir ve bir kısmı veya tamamının fotokopisi alınabilir.**
  (Bu seçenekle teziniz arama motorlarında indekslenebilecek, daha sonra tezinizin erişim statüsünün değiştirilmesini talep etseniz ve kütüphane bu talebinizi yerine getirse bile, teziniz arama motorlarının
  önbelleklerinde kalmaya devam edebilecektir)

 o **Tezimin/Raporumun 18/01/2018 tarihine kadar erişime açılmasını ve fotokopi alınmasını (İç kapak, Özet, İçindekiler ve Kaynakça hariç) istemiyorum.**
  (Bu sürenin sonunda uzatma için başvuruda bulunmadığım takdirde, tezimin/raporumun tamamı her yerden erişime açılabilir, kaynak
  gösterilmek şartıyla bir kısmı veya tamamının fotokopisi alınabilir)

 o **Tezimin/Raporumun……………..tarihine kadar erişime açılmasını istemiyorum ancak kaynak gösterilmek şartıyla bir kısmı veya tamamının fotokopisinin alınmasını onaylıyorum.**

 o **Serbest Seçenek/Yazarın Seçimi**

HACETTEPE UNIVERSITY
INSTITUTE OF POPULATION STUDIES
THESIS/DISSERTATION ORIGINALITY REPORT

HACETTEPE UNIVERSITY
INSTITUTE OF POPULATION STUDIES
TO THE DEPARTMENT OF DEMOGRAPHY

Date: 17/01/2017

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Student No:	N10147084
Department:	Demography
Program:	PhD in Demography
Status:	☐ Masters ☒ Ph.D. ☐ Integrated Ph.D.

ADVISOR APPROVAL

APPROVED.

Prof. Dr. A. Banu Ergöçmen
Title, Name Surname, Signature)

APPENDIX F: DATASET

Destination Country	Origin Country	Year	Migrant Proportion	Ratio of Population Size	Ratio of Population Density	Ratio of Population Change	Ratio of Child Dependency	Ratio of Old-Age dependency	Ratio of Total Dependency	Ratio of Potential Support	Ratio of Median Age	Ratio of Infant Mortality Rate	Ratio of Life Expectancy at Birth	Ratio of Total Fertlity Rate	Ratio of Urbanisation Change	Ratio of Education Index	Ratio of Unemployment Rate	Ratio of GNI	Ratio of Human Development Index	Distance	Policy Dummy
AUT	TUR	1960	0.00112	0.25645	2.39385	0.19959	0.43130	3.18966	0.61967	0.31395	1.85340	0.19948	1.51354	0.44510	0.13817	5.86022	1.11379	1.84171	2.14322	1640	0
AUT	TUR	1970	0.00434	0.21598	2.01549	0.18763	0.51216	3.10959	0.73419	0.32117	1.79679	0.16393	1.34714	0.40496	0.11655	2.31771	1.07910	3.66071	1.78906	1640	1
AUT	TUR	1980	0.01996	0.17303	1.61754	-0.01538	0.44000	2.76471	0.68395	0.35897	1.76768	0.13953	1.23768	0.38497	-0.00436	1.94737	0.72197	6.13978	1.57955	1640	0
AUT	TUR	1990	0.02385	0.14274	1.33191	0.27586	0.40523	2.83117	0.67634	0.35385	1.66972	0.12403	1.17381	0.47729	0.16472	1.66080	0.40000	8.93913	1.49318	1640	1
AUT	TUR	2000	0.02231	0.12731	1.18856	0.21959	0.51134	2.37895	0.81724	0.41509	1.54656	0.16129	1.11675	0.52314	0.13490	1.48073	0.72308	6.36993	1.35186	1640	0
AUT	TUR	2010	0.01915	0.11606	1.08298	0.25085	0.53563	2.48113	0.93762	0.40426	1.48582	0.75862	1.08737	0.67308	0.19656	1.27040	0.44860	4.95980	1.23719	1640	0
BEL	TUR	1960	0.00037	0.33176	8.43296	0.25255	0.47328	3.22414	0.66232	0.31395	1.83246	0.16535	1.53689	0.42028	0.17447	6.79704	1.54509	2.50761	2.32981	2485	0
BEL	TUR	1970	0.00215	0.27792	7.06195	0.14712	0.47887	2.91781	0.68735	0.34307	1.84492	0.13770	1.35949	0.40528	0.11305	2.39236	1.45550	5.00000	1.86427	2485	1
BEL	TUR	1980	0.00694	0.22448	5.71053	0.05714	0.42069	2.60000	0.64938	0.38462	1.72727	0.11628	1.24800	0.38803	0.06100	2.05921	1.10289	7.55376	1.63524	2485	0
BEL	TUR	1990	0.00875	0.18479	4.69373	0.15230	0.44118	2.92208	0.71843	0.33846	1.67431	0.13178	1.17848	0.52121	0.10350	1.77136	0.90000	8.43478	1.51884	2485	1
BEL	TUR	2000	0.00569	0.16237	4.12530	0.26014	0.55258	2.71579	0.90690	0.36792	1.58300	0.14516	1.11225	0.67096	0.17131	1.69371	1.01538	6.21480	1.40468	2485	0
BEL	TUR	2010	0.00865	0.15115	3.84043	0.45763	0.62408	2.45283	1.00195	0.40426	1.45390	0.68966	1.07975	0.89027	0.32924	1.29920	0.77570	4.79397	1.23913	2485	0
DEU	TUR	1960	0.00037	2.65597	5.86313	0.25866	0.40712	2.96552	0.58175	0.33721	1.81675	0.18110	1.52918	0.39467	0.23185	6.22177	0.00000	0.00000	0.00000	2168	0
DEU	TUR	1970	0.00564	2.25374	4.97345	0.14925	0.47375	2.95890	0.68735	0.33577	1.82353	0.14426	1.35700	0.36625	0.11072	2.19271	0.00000	0.00000	0.00000	2168	1
DEU	TUR	1980	0.02116	1.78017	3.93333	-0.06154	0.39034	2.81176	0.64444	0.35897	1.83838	0.12558	1.24484	0.35803	-0.01852	1.94079	0.69468	7.00538	1.59775	2168	0
DEU	TUR	1990	0.01850	1.46232	3.22650	0.29310	0.37582	2.79221	0.64586	0.36154	1.72477	0.10853	1.17397	0.46688	0.17638	1.62312	0.61250	9.27826	1.48724	2168	1
DEU	TUR	2000	0.02453	1.29500	2.85888	-0.03041	0.46392	2.49474	0.79655	0.39623	1.62348	0.14516	1.11389	0.55654	0.04069	1.59635	1.21538	6.25537	1.37990	2168	1
DEU	TUR	2010	0.03398	1.11236	2.45532	-0.04746	0.50369	2.95283	1.00975	0.34043	1.57092	0.65517	1.08238	0.67019	0.05405	1.40640	0.66355	4.50151	1.26723	2168	0
DNK	TUR	1960	0.00008	0.16626	3.01676	0.28513	0.50000	2.84483	0.66114	0.34884	1.72775	0.11549	1.59117	0.42414	0.40047	5.20430	0.72434	2.68643	2.23109	2366	0
DNK	TUR	1970	0.00006	0.14178	2.57080	0.26013	0.46223	2.61644	0.64637	0.37956	1.73797	0.09180	1.40168	0.35519	0.29254	2.19575	1.99310	5.91071	1.87835	2366	0
DNK	TUR	1980	0.00255	0.11668	2.11930	0.04396	0.44414	2.62353	0.67284	0.38462	1.73232	0.07907	1.26838	0.35488	0.07952	2.21053	0.81941	8.19355	1.69246	2366	0
DNK	TUR	1990	0.00412	0.09519	1.72507	0.13218	0.41340	3.01299	0.70392	0.33077	1.70642	0.10853	1.16704	0.53971	0.08892	1.78643	1.03750	10.66522	1.53825	2366	1
DNK	TUR	2000	0.00550	0.08441	1.53041	0.23649	0.57113	2.34737	0.86207	0.42453	1.55466	0.16129	1.09609	0.68410	0.19272	1.63083	0.69231	7.79475	1.39692	2366	0
DNK	TUR	2010	0.00723	0.07677	1.39149	0.30847	0.67568	2.40566	1.03314	0.41489	1.43972	0.55172	1.06969	0.89776	0.31941	1.39680	0.70093	6.11256	1.27920	2366	1
ESP	TUR	1960	0.00000	1.10518	1.70391	0.41141	0.53944	2.18966	0.65284	0.45930	1.52880	0.24147	1.51134	0.45845	0.51639	4.61559	1.29346	0.78040	1.82831	2966	0
ESP	TUR	1970	0.00000	0.97558	1.50442	0.46695	0.57746	2.10959	0.70960	0.47445	1.59358	0.17705	1.37556	0.50987	0.54545	1.91189	1.06786	2.08929	1.63162	2966	0
ESP	TUR	1980	0.00000	0.85877	1.32632	0.33407	0.56690	2.05882	0.72346	0.48718	1.53535	0.11628	1.27998	0.49849	0.30065	1.69737	0.94838	3.34946	1.48298	2966	0
ESP	TUR	1990	0.00010	0.72584	1.11966	0.15230	0.49020	2.59740	0.72569	0.38462	1.53211	0.11628	1.19910	0.42967	0.13557	1.49749	2.03750	5.31304	1.41680	2966	1
ESP	TUR	2000	0.00002	0.64437	0.99392	0.66216	0.44330	2.55789	0.78966	0.38679	1.52227	0.14516	1.13055	0.48290	0.49036	1.46247	2.12308	3.79475	1.31220	2966	0
ESP	TUR	2010	0.00007	0.64446	0.99362	0.34237	0.52580	2.37736	0.90643	0.42553	1.43972	0.62069	1.10296	0.67211	0.55774	1.38240	1.85981	3.22915	1.24785	2966	0

Destination Country	Origin Country	Year	Migrant Proportion	Ratio of Population Size	Ratio of Population Density	Ratio of Population Change	Ratio of Child Dependency	Ratio of Old-Age dependency	Ratio of Total Dependency	Ratio of Potential Support	Ratio of Median Age	Ratio of Infant Mortality Rate	Ratio of Life Expectancy at Birth	Ratio of Total Fertlity Rate	Ratio of Urbanisation Change	Ratio of Education Index	Ratio of Unemployment Rate	Ratio of GNI	Ratio of Human Developme nt Index	Distance	Policy Dummy
FIN	TUR	1960	0.00000	0.16078	0.40782	0.30550	0.62087	2.01724	0.71682	0.49419	1.48691	0.12073	1.50947	0.45213	0.62998	4.05108	0.56016	2.32188	1.99909	2476	0
FIN	TUR	1970	0.00001	0.13249	0.33628	0.13433	0.47631	1.89041	0.59719	0.52555	1.58289	0.08852	1.34332	0.32971	0.37413	2.08377	1.20958	4.41071	1.75985	2476	0
FIN	TUR	1980	0.00002	0.10885	0.27544	0.17582	0.41379	2.08235	0.58889	0.48718	1.65657	0.07442	1.25200	0.37473	0.32789	2.12171	0.35030	6.15591	1.62905	2476	0
FIN	TUR	1990	0.00009	0.09236	0.23362	0.23563	0.46895	2.58442	0.70537	0.38462	1.66972	0.08527	1.17047	0.57376	0.31195	1.73618	0.38750	11.30435	1.53321	2476	1
FIN	TUR	2000	0.00040	0.08185	0.20681	0.18243	0.55876	2.34737	0.85172	0.42453	1.59514	0.11290	1.11060	0.69618	0.21413	1.55172	1.70769	6.30549	1.36657	2476	0
FIN	TUR	2010	0.00084	0.07424	0.18830	0.32542	0.61179	2.43396	0.98830	0.41489	1.48936	0.44828	1.07941	0.89811	0.27273	1.29920	0.78505	4.95779	1.24131	2476	0
FRA	TUR	1960	0.00099	1.66465	2.34078	0.47862	0.53817	3.20690	0.72156	0.31395	1.73298	0.15486	1.53997	0.45158	0.61241	6.18145	2.04967	2.64422	2.27968	2478	0
FRA	TUR	1970	0.00009	1.46221	2.05531	0.34115	0.50832	2.82192	0.70492	0.35766	1.73797	0.12131	1.37461	0.45637	0.37529	2.22179	0.59348	5.37500	1.84783	2478	1
FRA	TUR	1980	0.00234	1.23111	1.73158	0.19121	0.47586	2.56471	0.69506	0.39316	1.64646	0.09767	1.26335	0.45308	0.12745	1.78618	0.54681	7.03226	1.57556	2478	0
FRA	TUR	1990	0.00305	1.05460	1.48148	0.28736	0.49020	2.75325	0.74311	0.36154	1.60550	0.11628	1.19163	0.57465	0.18367	1.59045	1.17500	8.98261	1.48696	2478	1
FRA	TUR	2000	0.00129	0.93907	1.31995	0.34459	0.59588	2.60000	0.92414	0.37736	1.53036	0.14516	1.12776	0.75093	0.37259	1.54361	1.56923	6.00239	1.37041	2478	0
FRA	TUR	2010	0.00476	0.87071	1.22340	0.33898	0.70270	2.49057	1.07212	0.40426	1.42199	0.58621	1.09756	0.96918	0.42506	1.29120	0.86916	4.40101	1.24024	2478	0
GBR	TUR	1960	0.00009	1.90215	6.05028	0.24440	0.45293	3.12069	0.63507	0.31977	1.86387	0.12073	1.55858	0.44667	0.11475	6.08871	1.49176	2.71752	2.29407	2916	0
GBR	TUR	1970	0.00002	1.59930	5.08628	0.14499	0.49296	2.84932	0.69321	0.35036	1.82888	0.11803	1.37623	0.43321	0.07576	2.45530	1.54608	4.03571	1.85981	2916	1
GBR	TUR	1980	0.00022	1.28051	4.07719	0.01978	0.45241	2.74118	0.69383	0.36752	1.73737	0.11628	1.25405	0.43119	0.03050	2.00000	0.35652	4.77419	1.57415	2916	0
GBR	TUR	1990	0.00056	1.05769	3.36325	0.14943	0.47549	3.12987	0.77068	0.32308	1.64220	0.12403	1.17638	0.59164	0.07434	1.61307	0.87500	7.50435	1.46555	2916	1
GBR	TUR	2000	0.00022	0.93085	2.95985	0.26351	0.60412	2.55789	0.92414	0.38679	1.52227	0.17742	1.11139	0.66398	0.25054	1.69574	0.86154	6.53938	1.40894	2916	0
GBR	TUR	2010	0.00115	0.86734	2.75745	0.49153	0.65848	2.31132	0.99805	0.43617	1.39716	0.68966	1.08015	0.93269	0.44226	1.40480	0.72897	4.06834	1.25849	2916	0
GRC	TUR	1960	0.00124	0.30164	1.80168	0.29735	0.51399	2.15517	0.62678	0.46512	1.52356	0.20735	1.50154	0.37174	0.40867	4.99462	0.78676	1.05072	1.92156	776	0
GRC	TUR	1970	0.00192	0.25247	1.50664	0.23881	0.49808	2.38356	0.65925	0.41606	1.78610	0.19344	1.35757	0.43910	0.38811	2.24566	0.87512	2.67857	1.73292	776	0
GRC	TUR	1980	0.00374	0.21910	1.30877	0.40879	0.48966	2.41176	0.69136	0.41880	1.73232	0.16744	1.25618	0.51486	0.31699	1.78618	0.94818	3.48925	1.49173	776	0
GRC	TUR	1990	0.00274	0.18765	1.11966	0.41092	0.46732	2.64935	0.71118	0.37692	1.65596	0.15504	1.19077	0.44897	0.27405	1.49749	0.87500	3.91304	1.38174	776	1
GRC	TUR	2000	0.00069	0.17321	1.03406	0.26689	0.45979	2.62105	0.81379	0.37736	1.55466	0.19355	1.12297	0.50740	0.28266	1.37931	1.80000	3.14558	1.26975	776	0
GRC	TUR	2010	0.00034	0.15458	0.92234	-0.07119	0.54054	2.70755	0.98830	0.37234	1.46454	0.93103	1.08197	0.70834	0.26536	1.27520	1.16822	2.77387	1.19494	776	0
ITA	TUR	1960	0.00044	1.80434	4.72067	0.27291	0.48728	2.50000	0.62559	0.40116	1.64398	0.23622	1.51872	0.40223	0.35363	6.62634	1.32733	1.58386	2.19644	1727	0
ITA	TUR	1970	0.00010	1.53926	4.02655	0.28571	0.49168	2.36986	0.65105	0.42336	1.75401	0.19672	1.36724	0.43310	0.29953	2.09592	2.55286	3.67857	1.75439	1727	0
ITA	TUR	1980	0.00087	1.28310	3.35965	0.12747	0.46759	2.42353	0.67284	0.41880	1.72222	0.14419	1.26326	0.37138	0.10458	1.78289	0.64696	4.52151	1.52496	1727	0
ITA	TUR	1990	0.00013	1.05580	2.76068	0.02011	0.39216	2.79221	0.66038	0.35385	1.69725	0.13953	1.19497	0.42475	0.01458	1.48744	1.22500	8.09130	1.45252	1727	1
ITA	TUR	2000	0.00017	0.90365	2.36375	0.17905	0.43711	2.81053	0.82759	0.34906	1.63563	0.16129	1.13534	0.51250	0.17987	1.40974	1.66154	5.20764	1.32697	1727	0
ITA	TUR	2010	0.00032	0.82406	2.15532	0.13220	0.52580	2.94340	1.02534	0.34043	1.55319	0.79310	1.10862	0.71417	0.28993	1.25440	0.78505	3.78894	1.22490	1727	0

Destination Country	Origin Country	Year	Migrant Proportion	Ratio of Population Size	Ratio of Population Density	Ratio of Population Change	Ratio of Child Dependency	Ratio of Old-Age dependency	Ratio of Total Dependency	Ratio of Potential Support	Ratio of Median Age	Ratio of Infant Mortality Rate	Ratio of Life Expectancy at Birth	Ratio of Total Fertlity Rate	Ratio of Urbanisation Change	Ratio of Education Index	Ratio of Unemployment Rate	Ratio of GNI	Ratio of Human Development Index	Distance	Policy Dummy
NLD	TUR	1960	0.00000	0.41444	9.45810	0.54786	0.62723	2.51724	0.75711	0.39535	1.49738	0.08924	1.61198	0.52034	0.42389	6.69892	1.43765	2.10419	2.35607	2485	0
NLD	TUR	1970	0.00144	0.37286	8.50664	0.46055	0.56210	2.21918	0.70375	0.45255	1.52941	0.07869	1.41374	0.46388	0.34149	2.35590	1.67485	5.00000	1.89995	2485	1
NLD	TUR	1980	0.00366	0.32121	7.33684	0.27033	0.47034	2.03529	0.63333	0.49573	1.57576	0.07907	1.29047	0.36762	0.25054	2.19408	0.39302	7.87097	1.69907	2485	0
NLD	TUR	1990	0.00998	0.27623	6.30057	0.37644	0.42810	2.38961	0.64731	0.41538	1.58257	0.10078	1.19816	0.51994	0.44461	1.86935	0.96250	8.72174	1.55975	2485	1
NLD	TUR	2000	0.01109	0.25133	5.73479	0.37500	0.56082	2.10526	0.81207	0.47170	1.51822	0.16129	1.11918	0.69292	0.77944	1.67140	0.41538	6.81623	1.41039	2485	0
NLD	TUR	2010	0.01173	0.23001	5.24681	0.24068	0.63636	2.18868	0.95712	0.45745	1.46099	0.51724	1.08960	0.86324	0.60688	1.38560	0.42056	5.37990	1.27753	2485	0
NOR	TUR	1960	0.00001	0.13000	0.27374	0.33605	0.52290	3.01724	0.69431	0.33140	1.79581	0.09449	1.61826	0.47817	0.51288	5.95027	2.16611	2.83850	2.34749	2814	0
NOR	TUR	1970	0.00007	0.11147	0.23451	0.31130	0.50064	2.80822	0.69789	0.35766	1.75936	0.08197	1.41862	0.45370	0.56527	2.17665	0.27112	5.57143	1.87864	2814	0
NOR	TUR	1980	0.00054	0.09299	0.19649	0.15385	0.48414	2.74118	0.72099	0.36752	1.68182	0.07442	1.28876	0.39547	0.17429	2.19079	0.10253	8.41398	1.70469	2814	0
NOR	TUR	1990	0.00119	0.07853	0.16524	0.28736	0.47876	3.27273	0.78955	0.30769	1.62385	0.10853	1.19101	0.62199	0.24344	1.88442	0.57500	11.52609	1.58618	2814	1
NOR	TUR	2000	0.00166	0.07103	0.14964	0.39865	0.63711	2.46316	0.93621	0.40566	1.49393	0.12903	1.12576	0.74849	0.46253	1.76471	0.53846	8.72554	1.45990	2814	0
NOR	TUR	2010	0.00250	0.06764	0.14255	0.81017	0.69779	2.14151	0.99610	0.46809	1.37234	0.51724	1.09243	0.93375	0.70762	1.45120	0.32710	8.88744	1.33331	2814	0
SWE	TUR	1960	0.00003	0.27148	0.50838	0.26273	0.43384	3.08621	0.61493	0.32558	1.88482	0.08661	1.61055	0.36215	0.40047	6.52151	1.04386	3.90430	2.46745	2453	0
SWE	TUR	1970	0.00046	0.23148	0.43363	0.24094	0.40717	2.86301	0.61710	0.35036	1.89305	0.07869	1.42398	0.34950	0.29837	2.37023	1.86158	8.03571	1.98426	2453	1
SWE	TUR	1980	0.00172	0.18929	0.35614	0.08571	0.42207	2.98824	0.69136	0.33333	1.82828	0.06977	1.29285	0.38470	0.05120	2.16776	0.17088	9.30108	1.71352	2453	0
SWE	TUR	1990	0.00345	0.15851	0.29772	0.31897	0.45588	3.59740	0.80697	0.27692	1.75688	0.08527	1.20703	0.68675	0.18659	1.73869	0.22500	12.06957	1.56351	2453	1
SWE	TUR	2000	0.00356	0.14029	0.26277	0.15203	0.59175	2.82105	0.95690	0.34906	1.59514	0.11290	1.13906	0.62839	0.12206	1.75659	0.84615	7.45107	1.45248	2453	0
SWE	TUR	2010	0.00433	0.12975	0.24362	0.53898	0.62162	2.63208	1.03704	0.38298	1.44326	0.44828	1.09972	0.95520	0.43489	1.41920	0.80374	5.41709	1.29313	2453	0
CHE	TUR	1960	0.00370	0.19221	3.74302	0.64969	0.46819	2.67241	0.61967	0.37209	1.71204	0.11811	1.56684	0.40908	0.67564	5.41935	0.61084	3.51891	2.28705	2123	0
CHE	TUR	1970	0.00211	0.17741	3.45354	0.36887	0.46735	2.36986	0.62998	0.42336	1.70053	0.10164	1.39977	0.38049	0.33333	2.43924	0.00000	0.00000	0.00000	2123	0
CHE	TUR	1980	0.00907	0.14358	2.79825	0.06813	0.41655	2.45882	0.63086	0.41026	1.74747	0.08372	1.29021	0.35701	0.31264	2.23026	0.39375	9.57384	1.72918	2123	1
CHE	TUR	1990	0.01364	0.12360	2.40598	0.47701	0.40686	2.76623	0.67054	0.36154	1.69266	0.10078	1.20742	0.51923	0.59475	1.74623	0.26250	16.04348	1.59338	2123	1
CHE	TUR	2000	0.01215	0.11331	2.20560	0.36824	0.53402	2.38947	0.83966	0.41509	1.56275	0.16129	1.14206	0.60084	0.22698	1.66734	0.41538	10.37947	1.45758	2123	0
CHE	TUR	2010	0.00839	0.10830	2.10851	0.76949	0.54300	2.33962	0.91618	0.42553	1.47518	0.51724	1.10950	0.73342	0.55037	1.34560	0.42056	7.77487	1.30230	2123	0