RURAL-URBAN MIGRATION AND UNEMPLOYMENT: EVIDENCE FROM TURKEY

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ABSTRACT

RURAL-URBAN MIGRATION
AND UNEMPLOYMENT:
EVIDENCE FROM TURKEY

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The primary aim of this study is to explore the connection between rural - urban migration and unemployment in Turkey and examine whether this internal migration has an effect on increasing the unemployment rates. By using Two Stage Least Squares (2SLS) panel data techniques and fully identifying these very concepts: migration from rural areas to urban areas, unemployment and internal migrations effects on the unemployment, an attention will be taken to the (negative) impact of internal migration on unemployment in Turkey.

Keywords: migration, rural-urban migration, unemployment, 2SLS panel data.

ÖZ

KIR-KENT GÖÇÜ
VE İŞSİZLİK:
TÜRKİYE ÖRNEĞİ

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Bu çalışmanın temel amacı, Türkiye'deki kırdan kente göç ile işsizlik arasındaki ilişkiyi ve bu göçün işsizliği artırıp artırmadığını araştırmaktır. Kırsal kesimlerden kentsel kesimlere göç, işsizlik ve iç göçün işsizlik üzerine olan etkileri kavramları bütünüyle tanımlanarak ve İki Aşamalı En Küçük Kareler yöntemi, panel veri teknikleri kullanılarak Türkiye'de iç göçün işsizliğe (negatif) etkilerine dikkat çekilecektir.

Anahtar kelimeler: göç, kırdan kente göç, işsizlik, 2 Aşamalı En Küçük Kareler yöntemi, panel veri.

I dedicate this study to my family.

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CHAPTER 1

INTRODUCTION

Migration is commonly described as the actual movement of individuals and groups from one physical location to another. One of the main causes of the currents of migration is the scarcity of labor in industry and commerce centers. This shortage of labor in one part of the country is supplied from other parts of the country where population is redundant. Therefore, most of the migrating people are migrating from the rural areas to those urban. This process of rural-urban migration is often associated with significant urban underemployment and unemployment (Bussey, 1970; Ravenstein, 1889).

The relation between migration and unemployment has been an important subject for many studies. For example see; Todaro (1969), Harris and Todaro (1970), Pissarides and Wadsworth (1989), Oliver (1964), Bencivenga and Smith (1997). The causality can run in both ways. Migration is a reason and also a consequence of unemployment. At the same time, unemployment is a reason and a consequence for migration.

The literature on rural-urban migration and unemployment, has gained its importance with Harris and Todaro (1970) and Todaro's (1969) papers. The basic Harris Todaro model has been reanalyzed and extended in various directions. In Harris and Todaro (1970), migration is widely considered as a self selecting process related to human capital investment. The importance of the negative impacts of rural to urban migration on unemployment has also been analyzed in the economic development literature. Most of the studies dealt with the relationship between growth and migration. Many other studies relate migration with unemployment.

According to some researchers, migrants make their decision to migrate according to the situations such as; income differences between the rural areas where they live and the cities (Pissarides and Wadsworth,1989), cost of living differences across regions (Saracoğlu and Roe, 2004), the expectation of the present discounted life-time earnings when migrating exceeds their expected income when staying at the same place of residence, the probability of finding a job in urban areas (Todaro, 1969; Harris and Todaro, 1970).

The motivation for the rural-urban migration in Turkey and other developing countries has aspects such as economic, social, cultural, geographic, demographic and political. However, a great majority of the internal migrants in Turkey change their permanent residence because of economic reasons.

In Turkey, 25 percent of the migrants give the migration decision because of the economic purposes. This rural-urban migration takes root mostly from the high income levels of the regions with high net migration rates rather than the low income levels of the regions with low net migration rates. Here, high income level of the place of destination is a pull factor for the Turkish migrants. When we look at the provinces with high net migration rates, 70 percent of the migrants who came to that province have moved from his/her origin because of the economic reasons (Yamak and Yamak, 1999).

There is a big difference between east and west regions of Turkey in terms of income levels. And this regional income distribution disequilibrium in Turkey worsens every year. When the average per capita GDP of Turkey is taken into account, it is observed that GDP per capita of western regions is reasonably higher than the GDP per capita in eastern regions of Turkey. Furthermore, Turkey faces a huge amount of unskilled labor migration from the less developed rural regions to more developed urban areas.

In developing countries and Turkey, the poor living and working conditions in rural areas cause people to leave their home and migrate to urban areas. Furthermore, large and mass population in rural areas constitutes a limit for the employment opportunities and pushes people into the cities with the expectation of finding a proper job. But the cities are generally inadequate to absorb and employ these large volumes of people in satisfactory jobs.

When people migrate, do they really find a job, or do they contribute to the existing unemployment in the place of destination? Does the unemployment in urban areas really affected from the rural urban migration? How does the unemployment level of Turkey affected from the internal migration?

The main aim of the study is to explore the connection between rural - urban migration and unemployment in Turkey and examine whether this has an effect on increasing the urban unemployment rates.

The process of settlement of population spreading rapidly towards urban areas started in 1950s. Turkish population has been directed towards to towns or cities since then. After World War II period, rapid urbanization has been an important phenomenon that affects both the developing and developed nations. The urbanization process in developing countries outruns the ability of the urban system to provide adequate number of jobs for new arrived migrants seeking employment. This inflow of population from rural areas to the urban, often overburdens the capacity of urban governments to provide basic services, employment and housing for the migrants. The social and economic pressure of the World War II had also affected Turkey as well as other countries.

In this period, the economic policies favoring agriculture and new technology transfers to agriculture sector caused a very large amount of unemployment among traditional agricultural workers. Apart from unemployment emerging due to technology transfers in agriculture sector, high birth rates of rural areas also triggered

the rural-urban migration in Turkey. The unemployed population of agricultural workers started to move to the cities employment is needed to find jobs in other fields (Tatlıdil, 2004).

The shift from the agriculture sector to the industry and the service sector is increasing every year. As a result of this transition, the ratio of rural proportion within the total population is decreasing and the shares of service sector and the manufacturing sectors are increasing; however the job creating capacity in industry is limited.

One of the most important reasons of the rural to urban migration in developing countries and in Turkey is unemployment. Migration, especially internal migration, breeds unemployment (Başol, 1995). Migrants might reduce the job prospects of the residents of urban through their adverse effect on the search efficiency of indigenous workers. Depending on their relative ability to find jobs, migrants may provide strong competition to native workers and increase their unemployment. Migration can cause unemployment; either directly through the number of new immigrants that are unable to find jobs, or indirectly if migrants displace workers from their existing jobs (Islam, 2007).

In Turkey some cities' or regions' unemployment rates are increasing because of the additional unemployed migrants migrating into those settlements (Foundation and Development of the Chamber of Certified Public Accountants of İstanbul, 2007). The current situation in Turkey shows that unemployment problem needs to be clearly understood and policies should be defined to overcome the problem.

Urban unemployment and underemployment is one of the important problems that every developing country and Turkey deals with for so many years. In order to avoid high unemployment rates it is necessary to understand the reasons of unemployment and define policies. Many studies have been conducted and many policies have been

developed for these issues. Therefore it receives much attention in the recent literature.

To explore the connection between rural - urban migration and unemployment in Turkey and examine whether this has an effect on increasing the urban unemployment rates, regional migration and unemployment ratios and statistics for Turkey utilized. In order to see the relation between regional migration rates and unemployment rates in Turkish provinces, an econometric model is constructed and further analysis will be carried by employing panel data techniques using the NUTS Level 1 statistical regions data obtained from TURKSTAT for the years 1975 to 1990.

Chapter 2 provides a literature review on rural-urban migration and unemployment to understand the theory. In this respect a brief definition to the concept of migration, labor market and unemployment are given. The questions of "Why people migrate?" and "What are the results of migration?" and the concept of rural-urban migration are investigated. Finally several models based on the rural-urban migration and unemployment will be presented.

In Chapter 3, migration and labor market in Turkey are deeply analyzed using the statistical data obtained from TURKSTAT. In this regard, historical background of rural-urban migration in Turkey, the numerical indicators of migration and unemployment in Turkey, social and economic characteristics of migrated population and labor market in Turkey are some topics that are investigated in this chapter.

The estimation procedures utilized to explore the connection between rural - urban migration and unemployment in Turkey and to examine whether internal migration has an effect on increasing the unemployment rates for the years 1980, 1985 and 1990 are explained in Chapter 4.

The data source and the variables used in this study are discussed in Chapter 5. The primary data used in this study is extracted mostly from Turkish Statistical Institute (TURKSTAT). Furthermore, 1975-1985 Gross Domestic Product (GDP) per capita data to calculate the Gross Provincial Product (GPP) per capita are taken from Karaca's (2004) Turkish Economic Association Discussion Paper. This study represents the 67 provinces (Nuts Level 3), 26 regions (Nuts Level 2) and 12 regions (Nuts Level1) of Turkey and the relevant data (unemployment rate, net migration rate, GPP per capita rate and population density) are adjusted based on 67 provinces. The series of the data we used for the analysis consist of three periods. The changes in the periods are shown as 1975-1980, 1980-1985 and 1985-1990.

In chapter 6, firstly to test for the potential endogeneity of migration rate, the Hausman test is used. Secondly, in order to overcome the endogeneity problem instrumental variables regression techniques are used. The instrument employed in this study is the log values of the population density for 67 provinces of Turkey. When deciding whether to use a fixed or a random effect model, Hausman specification test is used. The test result favors the use of random effect model. Therefore the random effect model is used throughout the study. Finally to see the effect of net migration on unemployment rates in Turkey, estimations are carried out by using Two Stage Least Square (2SLS) estimation methods for a panel of 67 provinces (Nuts Level3) of Turkey, 26 regions of Turkey (Nuts Level2) and 12 regions of Turkey (Nuts Levl1). According to the results of the estimations it is found that the net migration rate (NM) is statistically significant with a positive sign as we expected, indicating that an increase in the net migration rate increases the unemployment rate. In addition, the net migration rate is found to be statistically significant and there is a positive relation between the net migration rates and the unemployment rates for the provinces with positive net migration rates. Further analyzes are carried out in this chapter by using provincial and regional dummies.

Concluding remarks are included in the last chapter.

CHAPTER 2

THE THEORY AND THE LITERATURE REVIEW

In this chapter, to understand the theory, a brief literature review on rural-urban migration and unemployment will be provided. In this respect, firstly the concepts of migration, labor market and unemployment will be analyzed. The questions of "Why people migrate?" and "What are the results of migration and unemployment?" will be investigated and the concept of rural-urban migration will be discussed. Secondly, some theories of models based on the rural-urban migration and unemployment will be presented.

2.1. The Concept of Migration and Definitions

Migration is defined as the actual movement of individuals and groups from one place to another. It is the spatial process which makes possible the redistribution of population (Morrill, 1965). It is the shift of population often over long distances. Hence, it is one of the basic components of population change[1].

Migration is studied by a number of different disciplines such as; demography, economics, sociology and geography. There are various definitions of migration; for instance Jordan and Düvell (2003) describe migration as "…people moving, as fish, birds and animals do, under forces of nature, often following their flocks in search of pasture." Where, Thornthwaite (1934) defines migration as a process depending upon the establishment of means of intercommunication between areas having different intensities of population pressure.

1 Jackson (1986) states that, the extent of change in a population between two periods is a product of a combination of three factors, birth rate, death rate and migration.

There is always a situation of change of place; migration implies change of residence. To help understand whether or not migration has taken place, Jackson (1986) defines three initial guidelines underlining three domains: spatial, temporal and social. The three initial guidelines are as follows:

1. Migration is a significant movement which means migration has demographic consequences.
2. Migration must be sustained; this means the movement is not casual.
3. Migration must involve a distinct social transition involving a change of status or a changed relationship to the social as well as the physical environment.

The process of change of residence may be voluntary (free) or involuntary[2] (forced); individual, group or mass migration; can take place as temporary or permanent[3]; and can also be internal (migration inside the country) or external (migration across the countries).

Internal migration, or rural-urban migration, is in essence a change in the spatial distribution of population in a given country over time (Saracoğlu and Roe, 2004). Nam et al. (1990) emphasizes the importance of internal migration first as a component of localized population change and secondly as the major component influencing population redistribution within countries for some time.

Movement from rural to urban settlements takes place when economic and other advantages in urban centers couldn't be matched in rural life (Morrill, 1965). The higher wages, better hours, steadier employment, greater comfort, cultural, artistic

2 Such forced migration as the refugee movements of World War II.

3 According to Jackson's (1986) definition temporary migration implies that the place of permanent residence is maintained while the migrant is away for a period of work in another country or another part of the country, and may occur on a regular or seasonal basis. On the other hand permanent migration implies a definite change of residence based on a decision to move.

and creative activities, opportunities for better education, better medical facilities and training and the kind of individual freedom in urban life pulls people into the urban area from the rural area where there is low wages, lack of access to land, wasted land, lack of employment, drought and famine and population pressure depending on population increase.

The scarcity of labor in industrial and commercial centers is one other prime causes of the internal migration as well. This shortage of labor in one part of the country is supplied from other parts of the country where population is redundant.

One of the major problems about the internal migration and growth of urban populations is the already high incidence of urban poverty. It is estimated that approximately one half of the populations of several of the cities in some of the world's poorest countries already are living below official poverty levels. While the proportion of the poor has decreased in a number of the world's regions, as the population has increased in size, the absolute number of the urban poor is increasing (United Nations [UN], 1996).

Table 2.1: Urban and Rural Population of the World, Selected Periods, 1950-2030

	Population (billions)					Average Annual Rate Of Change (percentage)	
World	**1950**	**1975**	**2000**	**2005**	**2030**	**1950-2005**	**2005-2030**
Total	2,52	4,07	6,09	6,46	8,2	1,71	0,95
Urban	0,73	1,52	2,84	3,15	4,91	2,65	1,78
Rural	1,79	2,56	3,24	3,31	3,29	1,12	-0,03
	Percentage Urban					Rate of Urbanization (percentage)	
	29	37,2	46,7	48,7	59,9	0,94	0,83

Source: UN, 2006a.

Tables 2.1 and 2.2 give some information about the worlds and some major areas urban population. According to Table 2.1, it can be seen that the urban population is increasing every year. In 2000, Europe, Latin America and the Caribbean, Northern America and Oceania were highly urbanized with more than 70 per cent of their total population living in cities. Africa and Asia were the least urbanized major areas in the world. This can be seen from the Table 2.2.

Table 2.2: Percentage of Urban Population by Major Area, Selected Periods 1950-2030

	Percentage Urban						Rate of Urbanization (percentage)	
	1950	**1975**	**2000**	**2005**	**2030**		**1950-2005**	**2005-2030**
World	29	37,2	46,7	48,7	59,9		0,94	0,83
Africa	14,7	25,4	36,2	38,3	50,7		1,75	1,12
Asia	16,8	24	37,1	39,8	54,1		1,57	1,23
Europe	50,5	65,6	71,7	72,2	78,3		0,65	0,33
Latin America and the Caribbean	42	61,2	75,4	77,4	84,3		1,11	0,34
Northern America	63,9	73,8	79,1	80,7	86,7		0,42	0,29
Oceania	62	71,5	70,5	70,8	73,8		0,24	0,17

Source: UN, 2006a.

As people move to cities and towns, the world is becoming more urbanized. They search for employment and educational opportunities and higher standards of living, migrating from rural lands that can no longer support them.

However rapid rates of rural-urban population and urban population growth strain the capacity of national and local governments to provide basic services. Often the resulting inability to keep pace causes human suffering, environmental damage and unsustainable patterns of development (UN, 1996).

The concept of migration process has a broader consideration of social change. Migration is itself an act of change for the migrant as well as each of the societies

between which he moves. It can take different forms through time and space (Courgeau cited in Jackson, 1986: 41).

2.1.1. Why People Move?

Many studies have been conducted in order to understand the process of population shifts and the motivational structure about the migration process. In the middle of the nineteenth century, migration theory was dominated by the approach that the man was rational and responded to noticeable pressures to maximize advantage and minimize discomfort. By this principal a model of migration was defined (Bussey, 1970).

According to the classical migration theory, migration is based on “pull and push” factors, which are the main factors of migration. Additionally Bussey (ibid) emphasizes motivations of rural-urban migrants usually center on push or pull theories.

The essence of the push-pull theory was defined in a paper presented by E. G. Ravenstein in 1885. According to his theory, two groups of places exist. First one is the towns in “counties of absorption” and second one is the towns in “counties of dispersion"[4]. The process of absorption is the inverse of that of dispersion. The “counties of dispersion” are entirely agricultural and their population increases but slowly or is retrogressive, while the "counties of absorption" are the centres of manufacturing and commerce. The agricultural class within most of the former is less numerously represented than in the latter. The counties of absorption are fed by the countries of dispersion.

4 In counties of absorption, the rural population increases at a rate equal or superior to that of the general population of the country. In counties of dispersion, the rural population increases very slowly or decreases.

Based on Ravenstein's findings, Lee (1966) modified the theory of push and pull. Lee stated that, every act of migration involves an origin, a destination and an intervening set of obstacles. The intervening obstacles can be the distance of the move, actual physical barriers such as Berlin Wall, immigration law restricting the movement, cost of transportation, and so on.

The modified Ravenstein model assumes a set of factors which are associated with the area of origin and a set of factors which are associated with the area of destination. Together with the intervening variables, those sets of factors affect the actual balance of the migrant's interests. This push – pull model assumes a process of rational decision making and perfect knowledge of the system (Jackson, 1986).

According to the theory, in every area (the place of origin and the place of destination), there are factors that attract people and repel people. There are also some other factors which people are essentially indifferent.

Not all the people are affected the same way with the same factors. For instance, a good schooling system can repel a family with young children but a person without a child can be indifferent to the situation.

The intervening obstacles also vary from one person for another. For example for one person distance from the place of origin to the destination or cost of move can be very important when deciding to move or not, but for another person those issues can be minor issues to give the decision.

The push-pull theory states that, the push factors are the factors that drive people away from the place of their origin, and the pull factors are the factors that would make one person attracted to another area. Migrants leave the land because of unfavorable conditions prevailing in the countryside. Cities serve as a magnet having all the special advantages.

The push factors are generally economic and include lack of access to land, low wages, wasted land, lack of employment, drought and famine and population increase. According to Nam et al. (1990):

> …one of increasing population pressure in rural areas resulting from high population growth rates on fixed or slowly expanding agricultural land, coupled with a lack of employment opportunities outside of agriculture and the lack of amenities such as education in particular as …'push' factors behind much of the migration originating in rural areas (ibid:12).

In addition to those, the irregular hours and the long workdays, the relatively low social status attached to being a farmer, the lack of leisure, the hard, dirty works in all kinds of weather, the seasonality of paid employment, the changes is agricultural technology making employment prospects uncertain, the frequently poor working and living conditions[5] are some other push factors (Bussey, 1970).

> The 'push' theory is backed by the fact that for most people engaged in agriculture, incomes have never reached a level of near equality with those in urban areas in spite of considerable efforts in some of the developed countries to bring this about (ibid: 12).

On the other hand, the pull factors acts as attractions to pull people toward somewhere else. Ravenstein (1885) showed that some migration was directly to large urban cities, where migrants were attracted to the big cities.

According to Bencivenga and Smith (1997):

> …at least in the early stages of development, capital formation in urban manufacturing is far more rapid than that in agriculture. As a result, urban wage rates rise relative to rural wage rates, drawing labor into the city (ibid: 583).

[5] Numerous studies which have been made by the scholars of various disciplines about the migrants who have left their origins because of poverty to seek a better future showed that , the migrant are often badly informed about the place of destination and the bases on which their decisions depending on are indeterminate (Bussey, 1970).

The pull factors include higher wages, better hours, steadier employment, better medical facilities, opportunities for better education and training, greater comfort, cultural, artistic and creative activities and the kind of individual freedom that seems to be part of urban life. Caldwell (1969) points out that, the vast majority of the rural-urban migrants migrates to gain more money and to have better standard of living in the town rather than unbearable economic conditions in the rural areas. Where Sovani (cited in Bussey, 1970: 15) points out that the per capita incomes in rural areas are almost universally lower than the per capita incomes in urban areas.
Lee (1966) states, four kinds of decisions involved in the process of population shifts. These are;

1. Decisions associated with the area of origin,
2. Decisions associated with the area of destination,
3. Decisions concerning the intervening obstacles,
4. Decisions that depend on the purely personal considerations.

The migrant usually can make an informal judgment when the decision is about the area where he lives. But when the decision is associated with the area of destination, since he doesn't have exact information or has limited experience even if he has any information about the place where he will migrate, he generally can't make an informal judgment (ibid).

Based on the findings from the studies on France and Ireland, Jackson (1986) emphasizes the complexity of any consideration of why people move. He claims that migrants are part of a process that has become institutionalized by previous migrations. In this migration process, the routes are known and sometimes the migrants' relatives or friends will join him on arrival. By the remittances sent home by the migrant, economic links will be secured and sometimes the migrant sent fares to allow his younger brother/sister to follow himself. The immigrant community establishes its own pubs, restaurants, churches, clubs, sporting activities and gains

support from their area of origin. A complex institutional environment develops which is both supported by and itself supports the migration process.

> The migrant is a vehicle of change encapsulating the experience of two societies; he is as much a challenge to the social milieu that fails to hold him as he is to that to which he comes (ibid: 48).

People move from one place to another for number of reasons. The overpopulation in one part of a country can be one reason. Thus the surplus of the population in one part of the country shifts into another part. Scarcity of labor in somewhere else can also be another reason. There may exist undeveloped resources which attract migrants looking for remunerative jobs. Ravenstein (1889) gave some reasons that produce currents of migration as, heavy taxation, bad or oppressive laws, an unattractive climate, uncongenial social surroundings, and even compulsion such as slave trade. But as for him, most important cause arises from the desire inherent in most men to "better" themselves in material respects.

Lee (1966) relates migration to the degree of diversity of areas and people, the difficulty of achieving the intervening variables, fluctuations in the economy, the differences between agricultural and urban areas, technology, state of progress in a country and even migration itself. A person who has migrated once is more likely to migrate again because once he overcomes the difficulties while he was migrating, other sets of "intervening obstacles" do not seem so hard for him anymore. Moreover the overcoming of a set of intervening obstacles by early migrants lessens the difficulty of passage for the new, following migrants.

Changes in the lifestyle also cause migration such as, entrance into the labor force, retirement from work, marriage or divorce.

Some instant occasions such as an increase in crime ratios or an earthquake can cause movement of population as well. They can cause an area to lose its attractiveness and forces people to leave the area of origin.

Technology plays an important role on the people's decision to move, because as technology improves, communication becomes easier, transportation becomes cheaper, people move from one place to another easier and much of the difficulties in migration process decreases. "The technological developments such as transportation and communication also accelerate the migration process" (Yenigül, 2005).

Business cycles in an economy also affect migration, where movements of migrants are governed mostly by business considerations. For instance, during periods of economic expansion, new industries and businesses are created at a rapid rate, and new employees are needed to fill the empty places in those new businesses and industries. This creation of new job opportunities attracts migrants to those places. On the other hand, during the periods of depressions, some businesses and industries fail while some of them continue to work. The opportunities for finding a job decreases and even job losses occur. This situation repels people from that area and may be forces them to move to another area in the hope of finding a new job. Furthermore, Basker (2003) mentioned in his study that, business cycles plays a role in migration decision and found that intermediate-skilled workers are most sensitive to business-cycle conditions in their migration decision.

There are some other economic and social variables that serve an important role for the migration process, such as the social and cultural aspect of the area, the infrastructure and the amenities of the area, distance from other population centers, etc.

Urbanization and industrialization are some other important reasons to migrate from rural areas to urban areas. Towns and centers of industry are the goal to which the migrants from the rural districts most frequently direct their way. Development of commerce and industry calls for more hands to labor and this triggers the migration process. Bussey (1970) points out that, without urbanization and industrialization rural-urban migration might not have occurred in the first place. The study of migration and migrating labor has a general significance in understanding of the

political and economic changes brought about by industrialization. Migration is part of the relocation and reorganization of labor consequent upon industrial concentration, where Jackson (1986) argues migration is a phenomenon associated with industrial society and sees migration as an essential ingredient of the industrialization process, of national incorporation and of the shifts in agricultural production. Ravenstein (1889) mentions the importance of industrialization in migration process as well:

> Wherever I was able to make a comparison I found that an increase in the means of locomotion and a development of manufactures and commerce have led to an increase of migration. In fact you need only seek out those provinces of a country within which migration is proceeding most actively, and you will either find yourself in the great centers of human industry, or in a part of the country whose resources have only recently become available. Migration means life and progress; a sedentary population stagnation (Ravenstein, 1889:288).

The large towns grow at the expense of the rural parts of the country, even to the extent of producing a depopulation of the rural parts. In all settled countries the towns increase in this way (ibid).

During the nineteenth century in Europe, nearly all the land capable of being cultivated has been occupied and peopled. As a result of this, the migratory currents were produced by the development of commerce and industry in certain places or by an outflow of emigrants, whose places are filled up by local currents of migration. However in the United States, there existed one factor whose power is hardly known in Europe, namely, the powerful attraction of vast cultivable areas not yet taken by cultivators. In newly settled countries with large agricultural resources, the tendency of the rural population towards the towns was little. The increase of the towns there was because of the foreign immigration. If it were possible to create or open up similar resources in the rural parts of European countries, that would stop the rural to urban migration (ibid).

2.1.2. Consequences of Migration

The migration from rural to urban markets has been a major source of the growth in urbanization (Tatlıdil, 2004).

Bussey (1970) mentioned that rapid urbanization has been an important phenomenon of the post World War II period that affects both the developing and developed nations. One of the most significant of all post-war demographics phenomena and one that seems likely to happen even larger in the future is as in particularly developing countries, the rapid growth of cities. It is projected that urban populations in developing countries will nearly double by 2030 to 5.1 billion (Tatlıdil, 2004).

This overurbanization[6] is also found in the areas and countries where there is low or no pressure on land.

High rates of population increases in urban areas have some negative effects on socioeconomic life. The urbanization process in developing countries outruns the ability of the urban system to provide adequate number of jobs for new arrived migrants seeking employment. According to Tatlıdil (ibid) this inflow of population from rural areas to the cities, often overburdens the capacity of urban governments to provide basic services, employment and housing for the migrants.

The conditions in cities of developing countries points to the lack of health facilities, illiteracy, low wages, poverty, the absence or inadequacy of basic necessities such as transportation, sanitation, clean water, underemployment and unemployment. Breese (cited in Bussey, 1970: 20) states that, almost all urban migrants come to the city totally unprepared to compete in a successful way in urban society. As a result he describes this situation as unskilled labor, services or the type of self – employment as peddling.

[6] *Overurbanization* is a situation in which larger proportions of a country's population live in urban places than its degree of economic development. (Bussey, 1970)

Another negative effect is that the migrants from the rural areas decrease the education level in the urban areas.

> The education of migrants from rural areas, while greater than that of nonmigrants at origin, is less than that of the population at destination. Thus, we have one of the paradoxes of migration in that the movement of people may tend to lower the quality of population, as expressed in terms of some particular characteristic, at both origin and destination (Lee, 1966: 57).

In addition to those some of the problems that developing countries face because of the large scale rural-urban migration are the slums, influx and congestion of unprepared rural workers for jobs in the city, qualitative and quantitative depopulation of rural areas, along with second and third generation problems such as pollution of water and air.

By putting the problem of rural-urban migration in an international perspective, Bussey (1970) studied three countries' rural urban migration, Mexico, Italy and the Netherlands. Bussey found out that, migrants often escape from agriculture for subsistence urbanization and this creates some burdens for the developing countries. Those burdens of the economic transformations in the developing countries arises because of the situation that large number of peasants leaving their farm and moving to the cities.

2.2. Unemployment

2.2.1. An Overview

Labor market and its behavior is one of the most important issues in macroeconomic outcomes. Allocating labor resources in an efficient way is very important. According to Lange (1998), the allocation problem is not only a matter of moving labor into the right occupation, but requires adjustments for microeconomic characteristics of individuals and macroeconomic change in the economy as a whole. Obtaining labor's full potential contribution to production in a changing economy

with increasing complexity, changing tasks and specialization is desired for labor resources. Labor resources must reflect these changes as well as the changes in the relative cost of labor and other resources.

Begg et al. (2003: 385) describe the labor force as people with a job or registered as looking for work, the participation rate as the fraction of the population of working age who are in the labor force and unemployment rate as the fraction of the labor force without a job but registered as looking for work. Covick (1998: 100) defines unemployment as a situation of the quantity of the labor services which the sellers wish to supply exceeding the quantity the buyers wish to hire, at the prevailing market price of that labor.

According to Sinclair's (1987) definitions, unemployment is "not employed", so the unemployed are a subset of those who are not employed and are out of work 'full-time'. People under school leaving age, and the retired are excluded from this definition. The full-time workers and the part-time workers who do not wish to work full-time are the fully employed workers. The workers who do not wish to work and the workers who are not looking for work are neither employed nor unemployed which Sinclair (ibid) describes as voluntary non-employed. The strictly unemployed workers are the ones who wish to work. They are seeking job and they would be available to take up work at once. Finally the semi-unemployed workers are the ones who would not take up an immediate offer of a job, or who are temporarily not searching for employment.

Layard et al. (2005: 471) stressed that, unemployment is not determined by an optimal process of allocation, it performs a vital role in the redirection of labor. Its level is subject to a host of distorting influences, tending to make it higher than is economically efficient. Some of these distortions are the benefit system[7], which is

[7] Shackleton (1998: 53) explains that unemployment benefits perform income smoothing functions, valuable redistribute functions and some minimum level of benefits. It also performs a useful function in the labor market by enabling people to search for a reasonable period of time, thus finding better

subject to massive problems of moral hazard, and the system of wage determination, where decentralized unions and employers both have incentives to set wages in a way that generates involuntary unemployment and where bargained wages create mismatch between the pattern of labor demand and supply.

There are five major sourcess of unemployment. Those are; frictional unemployment, structural unemployment, seasonal unemployment, cyclical unemployment and induced unemployment (Byrns and Stone, 1989). Frictional unemployment can be describes as "…the irreducible minimum unemployment in a dynamic society" (Begg et al., 2003). At any given moment, there are always people entering the job market and people changing jobs. It is related to people changing jobs without changing their profession or geographic location. According to Begg et al. (ibid) this type of unemployment includes people who spends short spells in unemployment and they change jobs in a dynamic economy and people who are hard to get employed because of their handicaps.

On the other hand, structural unemployment is related to people changing their profession or changing their geographical location. Structural unemployment is not the result of a lack of jobs and it can be seen as a mismatch between the types and locations of workers looking for jobs and the locations and types of jobs offered, where Begg et al. (ibid) defines structural unemployment as arising from the mismatch of skills and job opportunities as the pattern of demand and supply changes. It can come about because of the technical progress making some types of job outdated and creating new types of job; or business closures in one area resulting a surplus of some skills. It can persist for long periods than the frictional unmeployment.

Furthermore, there are certain types of sectors, which requires more workers at one time of year than another, for instance, agricultural sector, beach towns and ski

matches with employers. However it strengths the bargaining power of workers and shifts the wage setting curve up and to the left.

resorts. This will result in seasonal unemployment during the off season (Byrns and Stone, 1989).

Another source of unemployment is cyclical unemployment. It results from a general business recession, because it coincides with downturns in business cycles. Case and Fair (1996) defines cyclical unemployment as the increase in the unemployment that occurs during the recessions and depressions. If an economy is in recession business expansions decline, companies close, and some face bankruptcy. These changes throw people out of work and increase overall rates of unemployment.

Finally the induced unemployment occurs because of some certain government policies such as, the minimum wage law which limits job opportunities for inexperienced and unskilled workers by overpricing their labor and another example is unemployment compensation (Byrns and Stone, 1989).

The most important factors determining the level of frictional, seasonal structural and unemployment are; structural change, level of economic activity, institutional restrictions and barriers, transmission of information, workforce mobility and seasonal industries.

In economy as a whole, the unemployment rate never falls to zero and capacity utilization never reaches 100 percent on account of the 'frictional' unemployment. Where Organization for Economic Cooperation and Development (OECD) stresses that, "It must be recognized that market economies cannot be operated at zero unemployment rates and that the 'full - employment unemployment rate' has probably tended to rise over time" (Organization for Economic Cooperation and Development [OECD], 1982:17). Since some types of unemployment are unavoidable and will exist even in an economy operating at its full potential, full employment includes some unemployment.

Unemployment has personal, moral, psychological, social, economic, financial, political and constitutional aspects (Phelan, 1931). It depends on so many different factors, and it is affected by prices, taxes, productivity, demand and supply shocks, some other shocks to the economy such as oil shocks, real wages, unions and wage bargaining, job search behavior of individual, unemployment benefits and active labor force policy.

Layard, et al. (2005) state that, when an unemployed person is searching for a new job, there are three stages involved. First he/she collects information about job vacancies, second he/she decides to apply for some of the vacancies that he/she learns of, and finally he/she generally accepts the offer of any job for which he/she has applied.

Unemployment rates vary across economies, different groups of workers within economies, age groups, time, occupations such as working-class occupations and managers, gender, regions, countries and regions within countries, sectors such as agriculture, manufacturing and finance.
It also varies between the groups of workers with different personal characteristics. Some of those personal characteristics are physical handicap, character faults such as drink, gambling, unpunctuality, theft, laziness, etc., physical and character defects, age. Addition to those, it varies between countries due to the differences in social institutions, including wage setting arrangements, the degree of labor flexibility and different levels of labor productivity. Concurrently it varies much more between business cycles than within business cycles.

In general unemployment is relatively high in coastal districts and low in agricultural regions (Sinclair, 1987). According to Sinclair, unemployment rates tend to increase with distant from the country's economic centre and it is higher in the inner city than in the more prosperous suburban and commuting areas.

OECD (OECD, 1982) states that the unemployed are not a static population waiting in a queue for a suitable job offer to appear. So unemployment has a dynamic nature. There is a turnover in unemployed population. Outflows from and inflows into the unemployment stock are very rapid. The size of the flows and the length of time that the unemployed spend in unemployment are called the duration of unemployment.

Sinclair (1987) claimed that unemployment duration increases steadily with age, with very few exceptions. According to his study based on the data from the UK, he found that unemployment duration also varies across gender, race, and marital status. For example, Wagner (1998: 122), says, depending on empirical evidence, older people are affected more frequently by unemployment and long-term unemployment than the general working population.

The unemployment duration has an impact on finding a job. The longer an unemployed person has been out of work, the more difficult it is to find a job. For instance in the countries with high unemployment rates, around half of the unemployed people are out of work for over a year. For such workers, the chance of finding a job is very weak when compared to the short-term unemployed people.

According to the traditional labor market theory, unemployment duration increases with the level of the replacement ratio which is a function of the level of unemployment compensation. It also increases with the potential duration of the coverage period of unemployment compensation (Schneider, 1998: 245).

Unemployment has been an important problem since the industrial revolution for all the developed and developing countries. The reason why unemployment is such an important issue is that, it creates too many economic and social problems.

The increase of unemployment reduces personal and social income; worsens the inequality of income distribution and poverty, causes production losses since labor

force[8] cannot be fully utilized. In addition to economic problems unemployment causes socio-psychological problems. It deteriorates the social morale and responsibility. Unemployed person loses his human capital capacities and skills by time and gets rejected from the society. Phelan (1931) argues that unemployment is a disease that defects our industrial civilization and it has been called the cancer of the body economic.

Furthermore, unemployment causes informal sector[9] to worsen. Some definitions for informal sector are as follows: Firstly, McKeever defines informal activities as "essentially transitory being consequence of the imperfect penetration of modem capitalism into the less developed regions" (cited in Yılmaz, 2006). Secondly, Sethuraman defines informal sector as:

> It (the informal sector) consists of small-scale units engaged in the production and distribution of goods and services with the primary objective of generating employment and incomes to their participants notwithstanding the constraints on capital, both physical and human, and know-how (Sethuraman, cited in Bulutay, 1995:198).

Lastly, the definition of the informal sector given by the International Labour Organization (ILO) is as follows:

[8] The size of total labor force includes working age population, which is generally taken to be the age group 15-64 years, and the participation rate. The working age is determined by past birth rates and modified by net migration. There are some factors affecting the labor force. Those are; participation rates, educational attainments, migration, total labor force growth and demographic factors such as, the working age population, birth rates, and changes in the pattern of family formation. Working hours is also a strategic variable. (OECD, 1982: 21)

9 Various terms have been used to describe informal economic activity in the literature. Those are: hidden, unofficial, shadow, underground, unrecorded, unreported, parallel, black and illegal. It is not legal because they are not officially recorded, and when we talk about officially unrecorded transactions, there are no taxes or licenses paid. By paying lower wages and not paying the fringe benefits that should be paid to the unionized labor in the organized sector, they disobey the existing labor laws. So the informal economy consists of entrepreneurs who produce legal products without legal status and proper permits. Chen (cited in Wan and Zhu, 2006:73) stresses the illegality of institutions as a major characteristic of informality.

> The informal sector consists of small-scale, self-employed activities (with or without hired workers), typically at a low level of organization and technology, with the primary objective of generating employment and incomes. The activities are usually conducted without proper recognition from the authorities, and escape the attention of the administrative machinery responsible for enforcing laws and regulations (ILO, 2000).

A considerable part of economic activities in developing countries are taken place in the informal sector with a significant amount of informal employment. It is a large and considerable part of economic life. Marjit and Maiti (2006) mentioned that, the share of formal employment may be as high as 70-80 percent in many developing countries. They give the example of India where the proportion of informal sector is 90 percent when agriculture is included.

The employment (in LDC's urban areas) in informal sector grows with at least the same rate as the growth of formal sectors employment. This means, the absorption capacity of informal sector is higher than the absorption capacity of formal sector (Bulutay, 1995). For example, Richardson (cited in Bulutay, 1995) gives some statistical example as follows; the informal sector in Latin America grew by 4.6 percent per year, between 1960 and 1970. Whereas the formal sector in Latin America grew only 2.5 percent per year between the same years.

Unemployed people see the informal sector as a cure for unemployment. McKeever (cited in Yılmaz, 2006) emphasized that during times of poverty or unemployment, formal economy[10] provides a temporary refuge for workers. People take informal jobs because underemployment is better than unemployment.

[10] Dimova, Gang ad Landon-Lane (2006) stresses that, the coexistence of the duality of formal and informal sectors is the deliberate government policies, extra taxes, support for unions, protective labor legislations, payoffs and a variety of other measures. All of the above ensures that the formal private sector is a high cost sector. One other reason for the existence of informal sector is, in the informal sector, competition is easier and more widespread in output (Bulutay, 1995).

According to Phelan (1931), unemployment is a drain on society. Therefore, in order to avoid high unemployment rates it is necessary to understand the reasons of unemployment and define policies.

Unemployment stems from variety of factors. For instance, labor costs are one of the reasons for the unemployment, where Howell (2005: 323) says that, the overall labor costs are the key to the unemployment problem.

Structural changes in the composition of demand for labor are another source of unemployment. Shan et al. (1999) found in their study on Australia and Canada that, these kinds of structural changes, which reflect employment dispersion as a result of technological and industrial structural change, are an important source of unemployment.

Orthodox view explains the persistence of high unemployment by the rigidities imposed by labor market institutions such as employment protection laws, centralized collective bargaining, legal minimum wages, and unemployment benefit programs. According to this view, macroeconomic developments are not the causes of the persistent high unemployment.

For example Schettkat (2005) says that, the root of European unemployment is labor market rigidities. According to Schettkat (ibid), labor market rigidities are the most popular explanation for the differences in employment and unemployment between the U.S. and Europe. Additionally, Howell (2005) says that labor market institutions undermine the competitiveness of large parts of the economy.

Imposition of minimum wages is one other example of factors that affects unemployment. Shackleton (1998: 50) pointed out that, according to the standard economic theory, the introduction of an effective minimum wage tends to reduce employment and, the abandonment of a minimum wage increases the employment.

Imposition of the minimum wages increases the wages for all groups of workers including the low paid ones.

Another reason is welfare state institutions. Welfare state institutions such as employment protection laws, wage bargaining institutions, taxes, unemployment insurance (UI), etc. have negative effects on wage flexibility and employment. So welfare state institutions affect the labor markets in a negative way.

The unconditional payment of benefits for an indefinite period can be a cause of high unemployment as well. Schettkat (2005: 263) pointed out that, the OECD and International Monetary Fund (IMF) argue that the unemployment payments and welfare benefits increases the natural rate of unemployment and reduces the speed of readjustment to equilibrium.

The issue of mismatch is also important for unemployment. Mismatch influences the effective supply of labor. For instance Entorf (1998) mentioned that, by many people, the rise in European unemployment in 1980's and 1990's were attributed to increased imbalances between the pattern of labor demand and supply, in other words, to greater mismatch.

Higher real interest rates could also help explain the high levels of unemployment. When explaining the persistence of high unemployment through the 1990's, Baker et al. (2005: 76) emphasized that, high real interest rates may rise unemployment through several channels. Firstly, higher real interest rates can increase unemployment by depressing aggregate demand.
Secondly, higher real interest rates may signal cases where the government pushes unemployment above the NAIRU[11] (nonaccelerating inflation rate of unemployment) on purpose in order to reduce the inflation rate. According to Glyn (2005), the

[11] NAIRU, the non accelerating inflation rate of unemployment, is the unemployment rate that can be maintained without triggering rising inflation. It is determined only by the flexibility of the labor market, not by aggregate demand. (Howell, 2005: 330)

problem of combining low inflation with sustained high levels of employment is a key question in the OECD countries.

Lastly, there are some ways that high real interest rates can affect the NAIRU itself. For instance, as firms seek to maintain profits after interest payments, higher real interest rates may push up profit markups. If markups are higher, than real wages will be lower and higher unemployment may then be required to achieve a corresponding reduction in wage pressure.

2.2.2. Explaining Unemployment History

The average level of unemployment varies greatly between decades. For instance, in the year 1929, the year of The Great Depression, the world was hit with levels of unemployment not seen before. Pribram (1931) points out that, the civilized countries entered into the period of a changing trade cycle with 5 million unemployed and by the middle of the year 1930 the number of unemployed people increased to 11 millions. And at the end of this year, the number of unemployed was estimated at from 19 million to 22 million people.

The countries which were seriously affected from the unemployment problem were the great industrial countries such as; the United States, Great Britain and Germany. But also the countries with the large shares in the world market are seriously affected. Those countries were; Belgium, Norway, Czechoslovakia, Canada, New Zealand, Japan, Australia, Italy, Poland and Austria. For instance, Germany's unemployed people were 25 percent of all workers. In England, 21 percent of all workers came under the unemployment insurance scheme. In the US, the number of hours worked in industry has fallen by about a third as compared to 1929 (ibid).

Pribram (ibid) gave some reasons to clarify the causes of this unemployment, when seasonal influences are left aside;

1. Circumstances that set up a permanent disproportion between the output capacity of undertakings and the absorptive capacity of the market,
2. Circumstances that make it difficult for undertakings to adjust costs to falling prices,
3. Circumstances that bring about an abrupt restriction of credit,
4. Circumstances which, without causing a restriction of output, lead to a fall in the demand for labor,
5. Unusual developments in world – economics which cause the prices of all goods, or the prices of specific classes of goods, to fall.

After a few decades, in 1960's, the average unemployment rate of the OECD was 2.1 percent. However, in 1970's unemployment level was over 25 million in OECD which was about two times as high as during the 1960's. This can be seen in Table 3.1. In 1970's, the labor market situation in the OECD area as a whole was in a very bad condition. Economic growth was reduced and labor supply pressure was increased. Those two effects combined and led to a steep rise in unemployment.

The first major cause for the deterioration in economic performance during this period was an important increase in the rate of OECD inflation. There were several reasons for this increased inflation such as generalized overheating of the OECD economy. Then, a series of sharp increases in some raw materials' prices has occurred. The acceleration of inflation was aggravated by the quadrupling of oil prices in 1973 and 1974. Over the eight years following the oil price rise, private sector and policy makers tried to overcome those problems. But the economic growth was very slow and was very insufficient in many countries to absorb the strongly growing labor force, even though the productivity growth decreased to historically low rates. Employment growth decreased in 1974 and became negative in 1975. Between the years 1970 and 1980, the number of unemployed was doubled (OECD, 1982).

The average rate of unemployment has increased dramatically from the early 1970's to the early 1990's. Table 3.1 gives the average unemployment rates of the 19 OECD countries between the years 1960 and 1999.

Table 2.3: Unemployment Trends for 19 OECD Countries

Average Unemployment Rates	
1960-64	2.1
1965-69	2.1
1970-74	2.5
1975-79	4.3
1980-84	6.9
1985-89	7.7
1990-94	8.8
1995-99	8.2

Source: Baker et al., 2005: 74

As can be seen from the Table 2.3, the average unemployment rate in early 1990's is nearly four times when compared to the late 1960's. In the second half of the 1990's, average unemployment rate declined.

In the 1970s the labor market situation in the OECD area as a whole worsened. Because of the combined effects of increased labor supply pressures and reduced economic growth, unemployment levels increased.

Unemployment increased sharply after the two oil shocks in both Europe and the US in 1970's. In the US unemployment reverted fairly quickly to lower levels. But in Europe it continued to rise until the mid 1980's (Shackleton, 1998: 44).

Some theories explained the rise in unemployment since the 1970's. For instance Lange (1998) stressed that, according to the Keynesian view, unemployment is in large measure the consequence of aggregate demand deficiency. But this view was

discredited by the simultaneous increases in unemployment and inflation in the 1970's. Some other examples are as such: The development of the expectations-augmented Phillips curve[12] analysis and the popularization of rational expectations by New Classical economists seemed to suggest that an economy could only temporarily be disturbed from its natural rate of unemployment (NAIRU) by shifts in nominal aggregate demand (Lange, 1998). Minford (cited in Lange, 1998) explained that, if the unemployment rate was perceived to be too high, this was because of 'rigidities' in the labor market, resulting from such factors as excessive public regulation, over-powerful trade unions, and the incentive pattern generated by the tax and social security systems. According to Blanchflower and Freeman (cited in Lange, 1998) the cure for excessive unemployment involved appropriate supply-side remedies targeted on these problems rather than the use of fiscal or monetary policies to stimulate aggregate demand. Such policies - which are generally intended to reduce the state's involvement in the economy.

For a time in early 1980's, many economics believed that only supply side interventions could have an impact on unemployment except in the very short run. But in the late 1980's, the view 'demand doesn't matter' was retreated by the economists. In the 1980s, most of the major European countries experienced a tightening in fiscal and monetary stance, which has continued into the 1990s as the result of the requirements of the Maastricht Treaty[13]. Experience of unexampled scale recession since the 1930s suggested that such sharp reductions in aggregate demand can have a lasting effect on unemployment.

However, 'new Keynesian' theorists have demonstrated that the wage and price rigidity associated with continuing unemployment can be explained in different ways

[12] Phillips Curve: The graph of unemployment against inflation for a varying level of aggregate demand in the short run is called a Phillps Curve.

[13] The Maastricht Treaty is the Treaty on European Union (TEU). It was signed on 7 February 1992 in Maastricht, the Netherlands after final negotiations on 9 December 1991 between the members of the European Community. The Treaty entered into force on 1 November 1993 during the Delors Commission. The Maastricht Treaty created the European Union and led to the creation of the Euro.

rather than the explanations proposed by the New Classicals. According to these explanations, unemployment may be intrinsic to developed market economies, rather than the consequence of interference with markets, and provided a rationale for renewed policy activism (Lange, 1998).

During the 1990's, Keynesianism and traditional supply-side solutions lose ground. Lange and Shackleton (1998: 145) states that, people lost their faith in Keynesianism and interested in active labor market policies (ALMP) because of the high levels of unemployment in Europe in 1990's. Some examples for those ALMP are; subsidized employment, the promotion of counseling and placement services, job creation and labor market training. According to Lange (1998), this led to a rise of interest in active labor market policies, for instance; work creation, training and the promotion of counseling and placement services.

Shackleton (1998: 47) considered that, in 1990's it is said that higher unemployment in the 1980's and 1990's had been associated with restrictive monetary policies. For instance the real interest rates, one indicator of this high level, were negative in some of the years of 1970's but they increased to high levels in early 1980's and remained relatively high. Some economists argued that a more relaxed monetary stance would be appropriate to maintain lower interest rates. Fiscal contraction in the early 1980's has also played a role in the rise of unemployment across Europe.

Table 2.4: Unemployment (Standard Rate) %

	1960-64	1965-72	1973-79	1980-87	1988-95	1996-99	2000-1	2002
Australia	2.5	1.9	4.6	7.7	8.7	7.9	6.5	6.3
Austria	1.6	1.4	1.4	3.1	3.6	4.3	3.7	4.3
Belgium	2.3	2.3	5.8	11.2	8.4	9.2	6.8	7.3
Canada	5.5	4.7	6.9	9.7	9.5	8.7	7	7.7
Denmark	2.2	1.7	4.1	7	8.1	5.3	4.4	4.5
Finland	1.4	2.4	4.1	5.1	9.9	12.2	9.4	9.1
France	1.5	2.3	4.3	8.9	10.5	11.5	9	8.7
Germany	0.8	0.8	2.9	6.1	5.6	7.4	6.4	6.8
Ireland	5.1	5.3	7.3	13.8	14.7	8.7	4	4.4
Italy	3.5	4.2	4.5	6.7	8.1	9.9	8.4	7.4
Japan	1.4	1.3	1.8	2.5	2.5	3.9	4.9	5.4
Netherlands	0.9	1.7	4.7	10	7.2	4.5	2.6	2.8
Norway	2.2	1.7	1.8	2.4	5.2	3.8	3.6	3.9
New Zealand	0	0.3	0.7	4.7	8.1	6.8	5.7	5.2
Portugal	2.3	2.5	5.5	7.8	5.4	6	4.1	5.1
Spain	2.4	2.7	4.9	17.6	19.6	19.4	13.5	
Spain*						15.8	11	11.4
Sweden	1.2	1.6	1.6	2.3	5.1	8.6	5.5	4.9
Switzerland	0.2	0	0.8	1.8	2.8	3.5	2.6	2.6
UK	2.6	3.1	4.8	10.5	8.8	6.8	5.2	5.1
USA	5.5	4.3	6.4	7.6	6.1	4.8	4.4	5.8

Source: Layard et al., 2005: xxi.
Notes: As far as possible, these numbers correspond to the OECD standardized rates and conform to the ILO definition. The exception here is Italy where we use the US Bureau of Labor Statistics "unemployment rates on US concepts". In particular we use the correction to the OECD standardized rates made by the Bureau prior to 1993. This generates a rate which is 1.6 percentage points below the OECD standardized rate after 1993. The rates referred to in Spain* refer to recently revised ILO rates. For earlier years we use the data reported in the book. The numbers given for Germany refer only to Western Germany to maintain comparisons through time.

In this Table 2.4, Layard et al. (2005) points out that, unemployment in the European Union in 2002 was 7.6 percent, which is higher than every non-European country except Canada. So, there is a European unemployment problem. Layard et al. says that, the European unemployment problem is a problem of the Big Four countries of Continental Europe (France, Germany, Italy and Spain) plus Belgium and Finland. Furthermore Denmark, Ireland, The Netherlands, Portugal and the UK have succeeded in dramatically reducing unemployment from the high levels attained in the 1980s.

Despite economic growth, unemployment is a bigger problem nowadays than in most of the fifty years. In Western Europe three times more people are out of work than in

the 1960's. The US job market has been more silent, but in many sections of the community unemployment is a big problem (Layard et al., 2005).

2.2.3. Consequences of Unemployment

Unemployment has some socioeconomic effects. First of all, it is a waste of human resources. In addition, a macroeconomic cost associated with unemployment is, it causes an immediate loss of value-added and output. The affect of high unemployment on public sector expenditure and revenues is that, it aggravates the pressure on deficits and as a result of this, the macroeconomic problems worsens.

The financial consequence of unemployment is a severe drain on the public finance. For instance when an individual is unemployed, he/she earns no wage. This affects the income tax where no contributions for social security are received from the employer and the worker. Also because the unemployed person spends less, indirect taxes collected will also be less. Finally unemployment benefit generally becomes payable and often supplemented by some other additional welfare payments. Because of unemployment governments faces revenue losses (Sinclair, 1987).

Tax revenues decreases because of a reduced tax base and the problem get bigger. One method for financing is increased taxation. Increased taxation requires a transfer to the consumption of unemployed people from either from funds or the consumption of other people. Those funds would have been used for savings and investment rather than using for the consumption of unemployed people. Result is a welfare loss in terms of future output. Second, method is borrowing. When borrowing is increased to provide liquid funds for benefit payments, bond prices decreases and interest rates increase. This also affects the future output. Third, public expenditure may be diverted from other areas. Lastly, financing by direct money creation, but it has clear inflationary implications. Whichever method of financing is used, results for welfare are likely to be adverse (Organization for Economic Cooperation and Development [OECD], 1982).

One other effect is that, high unemployment accompanies low output. If unemployment persists for some time, human capital investments decreases and future real income and output decrease. Decrease in output levels and future growth rates could result from the unforeseen macro-economic effects of financing the additional payments and services associated with large-scale unemployment (ibid).

Unemployment has some social affects too. Some of those affects are; stress, physical and mental health problems, crime and family disruption.

One other result is that, unemployment favors the expansion of the informal economy and of other activities which may partly compensate for the welfare loss from recorded employment (ibid).

A large informal sector has serious consequences. First of all, billions of dollars of potential profits are lost in developing countries each year because of the informal sector. Since they don't pay any tax and business-related fee in the informal sector, government loses large amounts of tax revenues. Secondly, it distorts the resource allocation. The informal economy lacks the resources, if an efficient use of resources cannot be provided; the economy cannot achieve its production potential. Thirdly the informal sector places considerable constraints on smaller firms. It limits particularly their access to public services, financial resources and utilities. Further, McKeever (cited in Yılmaz, 2006) says informal employment lowers the life chances of people at the bottom of the economic ladder. He asserts that development of the informal sector is an excuse for the state. Informal sector frees the state from providing more adequate social welfare services and creating jobs in the formal sector.

Increasing dependence on informal work and goods worsens the economic crises, which made people turn to the informal economy in the first place. It also weakens democracy. According to Bulutay and Taştı (2004):

> It is not possible to produce the much-needed outcome of raising the quality of labor and jobs through the informal sector. High population growth in the rural areas and the productivity increases in agriculture push people out of rural areas. These could lead to an increase in welfare on condition that high-quality employment opportunities have been created for those forced out from rural areas…Urban places should be areas where high-quality jobs are created. An urbanization attained through the informal sector… cannot constitute a valid response to this vital need. Developing countries have to find better ways of development (Bulutay and Taştı, 2004).

2.2.4. Solutions for the Unemployment Problem

Finding a solution to the unemployment problem has always been a vital issue for economies. Many studies have been conducted and many policies have been developed for these issues.

There are some solutions for unemployment such as; subsidized employment, direct job creation, labor market training, public employment services, guidance and counseling for the unemployed etc.

Creating jobs either by subsidizing private sector employers or by the government directly employing the jobless is one of the solutions proposed for unemployment problem.

Lange and Shackleton (1998) distinguished three board types of job creation measures, those are:

1. The unemployed is placed in schemes which are intended only to assist community projects and do not directly compete with private sector activity. For instance; jobs in auxiliary health care and environmental improvements.
2. The unemployed are publicly financed. This is a temporary employment in private sector where employers' willingness to take on the unemployed is encouraged by a subsidy which covers the large part of their wage bill.

3. Finally, assistance to individuals or cooperatives who wish to startup their own business.

Unemployment can also be reduced by reducing labor supply. Such reductions in labor force can come about for demographic reasons, government action and often as a byproduct of other policies (Shackleton, 1998: 58).

Raising the average skill level of the workforce is one other solution to lower unemployment level. According to Lange and Shackleton (1998), trained people are more likely to find jobs or find better paid jobs than they otherwise would. Also Shackleton (1998: 56) says the unskilled typically suffer from high unemployment rates than the skilled. And he adds that the demand for skills is rising over time and the availability of work for the unskilled is decreasing across Europe.

Also Layard et al. (2005) recommended some treatments for unemployment. These are:

1. Limiting the duration of eligibility for unemployment benefits.
2. Strengthening job search tests.
3. Introducing active policies to increase employability such as; targeted adult training, high-quality placement service, recruitment subsidies for the hard-to-place and guarantees of activity for the long-term unemployed.

But they don't recommend a general increase in public employment[14] and work sharing, early-retirement subsidies.

The job search behavior can also have a positive effect on unemployment. According to Layard et al. (2005), the harder people look for work, the lower unemployment

[14] Public employment services have three main functions. First one of them is job information, second is administration of income support, and finally advice, counseling and placement on active labor market policy programmes. (Lange and Shackleton, 1998: 152)

will be. The reason for this is wage pressure will be reduced at any given level of unemployment.

Schmitt and Wadsworth (2005: 157), focused on a central implication of the OECD-IMF orthodoxy. It says that, high labor market flexibility should be accompanied with low unemployment and high employment of workers including the less-skilled and less-educated workers. They explain the reason as follows, economic institutions, for instance unemployment benefit programs, legal minimum wage, labor unions, etc., creates wage floors. The wage floors raise the costs of employment. On the other hand, flexible systems, lowers the relative costs of hiring less-skilled workers, pricing them back into jobs. But in their study based on the data for many countries such as Austria, the Netherlands, Denmark, Sweden etc., Schmitt et al. (2005: 190) found that the OECD-style flexibility is not a necessary condition for good employment performance.

Some other policies for solving the unemployment problem that Layard, et al. (2005) considered were such;

- Unemployment is lower when the union coverage and union power in each bargain is lower. But for a given union coverage and union power, unemployment is lower when employers coordinate their wage offers at any industry or national level, and likewise when unions coordinate their wage claims.
- Conventional income policies: Government wage controls such as a maximum permitted percentage rate of growth of earnings.
- Tax based income policies: According to Layard, et al. (2005) there is a norm for the growth of nominal wages. However employers are free to pay more than this norm, at the cost of a substantial financial fine. Thus, employers can break the norm in order to recruit labor or avoid a strike, but all bargainers will be subject to strong disincentives to excessive settlements. The solution for the free markets excessive

wage pressure, would be taxing the excessive wage. This could be achieved through a tax on excessive wage growth or through a progressive tax on wage levels.

- Profit sharing improves productivity and industrial relations. This could also be used as a device to reduce unemployment.
- Early retirement and work-sharing. By using the early retirement policy, labor force would be reduced. This would decrease unemployment. But early retirement does not make jobs available for people who would otherwise be unemployed, it just reduces unemployment. The work sharing policy also has the same effect. It is redistributing the available work to more people. But cuts in hours provide a poor antidote to unemployment.
- Employment protection legislations. For instance when a worker is laid off, he/she be given advance notice, severance pay (redundancy payments) and a satisfactory reason. This kind of policy reduces the rate of flow into unemployment and this effect tends to reduce unemployment.
- Demand management is another way used to reduce unemployment. On the supply side, there exist policies which would really help to decrease unemployment.

2.3. Internal Migration and Unemployment in Theory

2.3.1. Literature Review: Rural-Urban Migration and Unemployment

The relation between migration and unemployment has been an important subject for many studies. For example see; Todaro (1969), Harris and Todaro (1970), Pissarides and Wadsworth (1989), Oliver (1964), Bencivenga and Smith (1997). The causality can run in both ways. Migration is a reason and also a consequence (DaVanzo, 1978; and Pissarides and MacMaster, 1990) of unemployment. At the same time,

unemployment is a reason and a consequence (Harris and Todaro, 1970; and Chaudhuri, 2000) for migration.

Migration is known to be a reason for unemployment, especially in developing countries. Migration, especially internal migration, is thought by some authors (Başol, 1995) to be breeding unemployment.

For instance Tatlıdil (2004) emphasizes that, rural-urban migration was viewed favorably in the economic development literature until the end of 1960's. Before, it was thought to be a natural process in which surplus labor was in degree withdrawn from the rural sector to provide needed manpower for urban industrial growth. However, Tatlıdil (ibid) points out that migration today must be seen as major contributing factor to the widely present phenomenon of urban surplus labor force, which continues to make worse already serious urban unemployment problems.
Additionally, in their study, Harris and Todaro (1970) analyze the importance of the negative impacts of rural to urban migration on unemployment in the economic development literature.

According to some authors, migrants make their decision to migrate according to the situations such as; income differences between the rural areas where they live and the cities (Pissarides and Wadsworth ,1989), cost of living differences across regions (Saraçoğlu and Roe, 2004), the expectation of the present discounted life-time earnings when migrating exceeds their expected income when staying at the same place of residence, the probability of finding a job in urban areas (Todaro, 1969; Harris and Todaro, 1970).

2.3.2. Theoretical Background

Some of the studies dealt with the relationship between growth and migration (Bencivenga and Smith, 1997 and Saraçoğlu and Roe, 2004). Many other studies

relate migration to unemployment (Pissarides and Wadsworth, 1989: Todaro, 1969; Harris and Todaro, 1970).

The literature on rural-urban migration and unemployment, has gained its importance with Harris and Todaro (1970) and Todaro's (1969) studies. The basic Harris and Todaro model has been reanalyzed and extended in various directions. In Harris and Todaro (1970), migration is widely considered as a self selecting process related to human capital investment. In both of these studies, migration is said to be a reason for mass urban unemployment.

2.3.1. An Overview of the Todaro Model (1969)

Todaro stresses the chronic problem of urban unemployment and underemployment in developing countries in this study. He attributes this phenomenon to an excess inflow of workers from rural to urban areas which is induced by rural-urban income differences. The flow of rural migrants into urban areas steadily increases, but the ability of the urban economy to provide permanent jobs for these migrants is unsatisfactory.

He studied the causes and the implications of a large and rapidly growing pool of urban unemployed. This model of labor migration underlines the interdependent effects of industrial expansion, productivity growth, and the differential expected real earnings capacity of urban versus rural activities on the size and rate of increase in labor migration and, therefore, ultimately on the occupational distribution of the urban labor force.

The objective of this study is twofold. First, Todaro formulates an economic behavioral model of rural-urban migration[15], to see if probability of finding a job in modern sector acts as an equilibrating force on urban unemployment rate or not. The

[15] The economic behavioral model of rural-urban migration that Todaro formulated represents a realistic modification and extension of the simple-wage differential approach.

model is both descriptive and analytical with respect to the mechanism through which economic variables influence urban labor markets in less developed countries.

Secondly, Todaro incorporates this probabilistic approach into an important model of the determinants of urban labor demand and supply. This model can be used among other things to estimate the equilibrium proportion of the urban labor force that is not absorbed by the modern industrial economy, when values for the crucial parameters are given.

Here, the existence of a large pool of unemployed and underemployed urban workers affects a prospective migrant's "probability" of finding a job in the modern sector. As a result, when analyzing the determinants of urban labor supplies, one must look not at prevailing real income differentials as such but rather at the rural-urban "expected" income differential, i.e., the income differential adjusted for the probability of finding an urban job.

Todaro formulates labor migration processes as such; he takes into account that migration results in response to expected income gaps which are adjusted for the probability that workers will obtain urban jobs, instead of assuming that migration is caused by actual income differences. So the decision to migrate from rural to urban depends on the urban-rural real income differential and the probability of obtaining an urban job.

The assumptions of the model are as such:

1. The percentage change in the urban labor force as a result of migration during any period is governed by the differential between the discounted streams of expected urban and rural real income expressed as a percentage of the discounted stream of expected rural real income.
2. The planning horizon for each worker is identical.
3. The fixed costs of migration are identical for all workers.

4. The discount factor is constant over the planning horizon and identical for all potential migrants.

Todaro sees labor migration in less developed countries as a two stage phenomenon. First, the unskilled rural worker migrates to an urban area and initially spends a certain period of time in "urban traditional[16]" sector. And second, the migrant attains a more permanent modern sector job at the prevailing urban real wage.

The unemployment duration influences the prospective migrant's decision to leave the farm or not. At the same time even if expected urban real income is less than rural real income for a certain period of time following migration, it may still be economically rational from a longer-run point of view for the migrant to migrate.
In conclusion Todaro found out that, "as long as the urban-rural real income differential continues to rise sufficiently fast to offset any sustained increase in the rate of job creation, then even in spite of the long-run stabilizing effect of a lower probability of successfully finding modern sector employment, the lure of relatively higher permanent incomes will continue to attract a steady stream of rural migrants into the ever more congested urban slums" (Todaro, 1969: 147).

The policy implications are as such:

1. If employment creation is high on the priority list of developing countries, not only should the real wage differential be prohibited from increasing through some appropriate incomes policy but also output and productivity growth in agriculture wherever feasible must be achieved through more efficient use of existing capital resources and not through capital-labor substitution.
2. To reduce the size of the urban traditional sector, there should be a concentrated effort at making rural life more attractive (ibid).

[16] The urban traditional sector encompasses all the workers not regularly employed in the urban modern sector.

2.3.2.2. An Overview of the Harris and Todaro Model (1970)

Within the context of a two-sector model, Harris and Todaro (1970) emphasize that, migration proceeds in response to urban-rural differences in expected earnings with the urban employment rate acting as an equilibrating force on such migration. In this model, migration is a disequilibrium process.

They expand Todaro's work into a two-sector framework including the rural sector and examine welfare implications of the wage gaps and urban unemployment.

Harris and Todaro have focused their attention also on massive urban unemployment in less developed countries in their 1970 study. According to them, rural to urban migration is accelerating and this causes overcrowding and unemployment in urban areas as migration rates exceed urban job creation rates. Hence many people end up in unproductive or underproductive employment in the informal sector.

However, even though this migration creates unemployment and causes informal sector to expand, this behavior is economically rational and utility-maximizing in the context of the Harris-Todaro model. As long as the migrating economic agents have complete and accurate information concerning rural and urban wage rates and probabilities of obtaining job, they will make an expected income-maximizing decision (Amano, 1983).

Their model economy can be characterized as follows; in the urban (industrial) sector, there is a politically determined exogenous minimum urban wage at levels substantially higher than the competitive wage in the rural (agricultural) sector. Then, when the assumption of no agricultural labor surplus is made, they considered the effect of this parametric urban wage on the rural individual's economic behavior.

The model is used for the following purposes;

1. Given the politically determined high minimum wage, the continued existence of rural-urban migration in spite of substantial overt urban unemployment represents an economically rational choice on the part of the individual migrant;
2. to show that economists' standard policy prescription of generating urban employment opportunities through the use of "shadow prices" implemented by means of wage subsidies or direct government hiring will not necessarily lead to a welfare improvement and may, in fact, exacerbate the problem of urban unemployment;
3. to evaluate the welfare implications of alternative policies associated with various back-to-the-land programs when it is recognized that the standard remedy suggested by economic theory—namely, full wage flexibility—is for all practical purposes politically infeasible. Special attention will be given here to the impact of migration with unemployment on the welfare of the rural sector as a whole which gives rise to intersectoral compensation requirements;
4. to argue that in the absence of wage flexibility, an optimal policy is, in fact, a "policy package" including both partial wage subsidies (or direct government employment) and measures to restrict free migration (Harris and Todaro, 1970:127).

In the urban sector there exists unemployment, while in the rural sector the supply of labor is assumed to be fully employed. Then, workers allocate themselves between the two sectors until equality holds between urban expected wages (actual urban wages times the employment rate there) and actual rural earnings.

The main assumption of the model is that, rural urban migration will continue so long as the expected urban real income at the margin exceeds real agricultural product.

According to this model, under these assumptions, the imposition of a minimum wage gives rise to an equilibrium characterized by unemployment and loss of potential output of both goods. So if minimum wage is fixed in terms of the agricultural good, than equilibrium is only achievable with unemployment.

Harris and Todaro explained that, if a shadow wage is implemented to the model, this would increase production of the manufactured good, but creation of an additional job at the minimum wage will induce some additional migration from the rural sector and therefore agricultural output would fall.

They also explained what happens to the aggregate welfare if a migration restriction policy is implemented. They concluded that

> …although migration restriction will improve aggregate welfare of the economy,…, substantial compensation to the rural sector will be required if it is not to be made worse off by removing the opportunity for free migration (Harris and Todaro, 1970:137).

As a policy implication to a welfare improvement in their model, they suggested a combination of both limited wage-subsidy and a migration-restriction policy.

2.3.2.3. An Overview of Relation between Internal Migration, Wages and Unemployment: The Model of Christopher A. Pissarides and Ian MacMaster (1990)

Counter to Harris and Todaro's (1970) and Todaro's (1969) studies, migration is examined as a consequence for unemployment, and wages and unemployment are the most important determinants for migration.

The main aim of Pissarides and Mac Master's (1990) study is to consider the extent to which regional disparities in economic prosperity are removed over time by the working of the 'market system'. Pissarides and MacMaster (ibid) explain this phenomenon trough the traditional economic theory. To achieve their goal, they search whether there is a long-run relation between a region's relative wage and unemployment differential and, if it exists, whether adjustment to this long-run relation is slow or fast.

According to the traditional economic theory, areas with the unemployment rates higher than average unemployment will have falling relative wages, which will result in an increase in the relative demand for labor. These areas will experience net emigration to other regions, and this will reduce their relative labor supply. Through these two mechanisms equilibrium with only compensating differentials will result, at least in the long run. Thus, regions with above-average unemployment should, in the long run, have above average wages and vice versa.

Pissarides and MacMaster (1990) define the net migration rate as the difference between a region's immigration and emigration expressed as a proportion of its population. They claim that, it is a rising function of the gain from moving into the region. According to them, a household calculates his own gross utility for; remaining in the region of residence and for moving to the best alternative region. He/she migrates if the cost of migration does not exceed the gross gain from moving.

“With a large population, the proportion of a region's population that moves out is a rising function of the gross gain from moving and the proportion that moves in is a declining function of the same gain” (Pissarides and MacMaster, 1990: 813). This gain depends on the regional unemployment rates and relative wage rates. Here, the gain from moving out falls and the gain from moving in rises if a region's relative wage rises, so the region's net migration increases.

Aggregate unemployment also affects the gains from migrations. For instance, if unemployment is higher everywhere and if the employed people have accumulated seniority rights in their jobs, than the employed may feel more secure where they are and don’t want to migrate.

In their study, they used time series cross-section analysis method for all the standard regions of Great Britain covering the period 1961-1982, and their estimated wage effect suggested that, unemployment ratios influences migration decision significantly and permanently, where wage differentials influences it temporarily. For example, if a region's relative wage remains constant for a long period of time, there would be no wage-induced net migration flows regardless of the level of its relative wage. “Thus, high unemployment regions will… forever lose population to low unemployment regions until, presumably, the unemployment differentials are eliminated” (Pissarides and MacMaster, 1990:819). However, since the migration process is slow, this equalizing process may take a long period of time.

Pissarides and MacMaster characterized regions with high-unemployment rates are by negative net migration rates, and regions with low-unemployment rates by positive net migration rate:

> …when national unemployment rises, net immigration into low-unemployment regions falls and net emigration out of high-unemployment regions also falls. Thus the response of net migration to unemployment ratios carries with it the implication that in times of high unemployment migration in general suffers (Pissarides and MacMaster, 1990:819).

The main conclusion of this study is that, the market mechanism can remove regional inequalities in economic prosperity. But this process takes such a long time that exclusive reliance on it could be very costly in terms of under-utilized resources in the high unemployment regions. Migration from one region to another was found to respond to changes in regional relative wages and to differences in employment opportunities, as measured by regional unemployment ratios. For instance, if a region has above equilibrium unemployment, there will be an outward migration, which reduces unemployment and vice versa. Since migration influences a region's unemployment rate, in the end the migration induced by changes in the relative unemployment rates brings the system back into equilibrium.

One other finding of the study is that, if unemployment durations differ, it is possible to have a net gain in employment by a simple reallocation of jobs towards regions of lower durations.

In addition to those findings, according to their empirical studies, there is a unique long-run equilibrium distribution of unemployment rates across the regions, matched by compensating wage differentials. "…relative wages respond to unemployment differentials too; there is a tendency to a long-run equilibrium where relative wages compensate unemployment differences at the rate of 3 to 1" (Pissarides and MacMaster, 1990: 828). But the adjustment processes work very slowly, it takes more than twenty years to eliminate a 'disequilibrium' unemployment differential in a depressed region. This could give a rise to substantial output losses.

The policy implications of this study is that; since the process of adjustment of unemployment and wage rates takes a long time, a regional employment policy might be able to speed up this process by encouraging firms to move a long time before people do, and so save some transitional unemployment in the high unemployment regions[17].

[17] At the high unemployment times, a purely regional policy would save even more person-years of unemployment than at times of low unemployment.

> Hence, a regional policy that moved jobs to depressed areas-in contrast to relying on the movement of people to jobs-could save society considerable adjustment costs" (Pissarides and MacMaster, 1990:828).

2.3.2.4. Summary of the Main Findings in Some Studies

The aim of Todaro (1976)'s study is to develop the conditions under which an autonomous increase in urban job creation designed to eradicate urban unemployment will, in fact, cause the level and rate of unemployment to rise. He develops the conditions using the Todaro model of rural-urban migration for LDC's. Then he examines data for 14 LDC's to see what the elasticities of migration with respect to job probability would have to be in order for the paradox of job creation increasing unemployment to hold. These elasticities are small enough that the paradox can be expected to hold for most LDC's. He concludes that, any real attempt to tackle the widespread problem of excessive rural-urban migration in the context of rising urban unemployment will of necessity require concentrated efforts at narrowing the ubiquitous and, in most cases, growing imbalances between urban and rural expected incomes by holding the line on the growth of the former while focusing on rapidly raising the latter. According to him, there would appear to be no strictly urban solution to the urban unemployment problem and rural development is essential.

Yap (1976) examines the income gains associated with rural-urban migration in Brazil and whether urban poverty can be attributed to the slow assimilation of migrants in the urban labor market. In doing so, earnings functions are estimated to facilitate comparisons between migrant and non-migrant incomes. The data base is provided from a sample of individual returns from the 1960 Brazilian Census of Population. In conclusion, migrants derive significant income benefits from moving, and that within a short period of time, their income and employment pattern are virtually indistinguishable from those of the urban-born. As a policy implication Yap

suggests that strategies to alleviate poverty should place more emphasis on raising the skill levels of the urban population than on restricting migration to cities.

In his study, Fields (1976) aims to show how labor turnover considerations can be integrated into the human investment theory of migration and to demonstrate that such a model provides a much better explanation for migration rates into major metropolitan areas than the conventionally used unemployment rate. He uses a class of spatial economic - demographic forecasting models as his method. In this study, the models combine elements of traditional Markov and economic gravity models. A base-period probability structure is modified by the changing relative distribution of economic opportunity. He addresses estimation issues, and describes an empirical application to US interstate migration during the late 1970s. The study contends that the framework represents a merger of past demographic and economic modeling traditions in a spatial interaction framework. He concludes that the validity of the human investment approach to migration is reconfirmed by these findings. These findings also make clear that general human investment notions must be translated into specific empirical form with great care. A labor turnover formulation gives a much different picture of the migration phenomenon than an approach based on unemployment rates.

An example of migration examined as a consequence for unemployment is the study of Da Vanzo (1978). Da Vanzo, aims to see whether unemployed workers are more likely to leave areas with high unemployment rates than areas with lower rates and to find a positive relation between origin unemployment rates and outmigration. Da Vanzo uses a multiple regression analysis of longitudinal data on households from the Panel Study of Income Dynamics (PSID). According to her findings, she concludes that the "push" of origin unemployment rates is effective, but only for those who are without jobs. Unemployed persons, as well as others looking for jobs, are more likely to move than those not actively searching for work. Recent arrivals to an area who cannot find acceptable jobs are especially prone to migrate again. The unemployed and other persons looking for work are more responsive to the other

economic determinants of migration than persons apparently satisfied with their jobs. And income effects are strong and negative for the unemployed. According to her, policies that induce the unemployed to move may amount to no more than a costly duplication of private market forces already working in the right direction. She suggests that, public programs that provide job market information might help discourage such costly and unproductive repeated moves and help to improve the efficiency of migration. Since the consequence of one move may be the cause of the next, an integrated study of the determinants and consequences of geographic mobility should help to improve the understanding of repeat and return migration and the phenomenon of the "chronic migrant." Policies of investment to expand economic opportunities in depressed areas are likely to help prevent economically forced outmigration.

A Dutch case study has been made by means of logistic regression by Van Dijk and Folmer (1986). They investigate whether the interregional migration causes unemployment in the place of origin and if migrants fulfill vacancies which could also have been filled by native unemployed. They conclude that, the process of supersedence of native unemployed by employed migrants exists but plays only a minor role.

Another study of migration seen as a consequence for unemployment is conducted by Pissarides and Wadsworth (1989). They examine the relation between unemployment and the interregional migration of labor. They argue that unemployment might affect mobility at three levels. First, the status of a worker affects mobility: an unemployed worker is more likely to move than an employed one. Second, regional unemployment differentials encourage mobility: the probability that a given worker migrates is higher if the worker lives in a high-unemployment region and the bigger the region's unemployment differential the higher the migration probability. Third, at higher overall unemployment rates the probability of migration is less. To estimate the probability of migration they use data from the Labour Force Survey. The first and second effects of unemployment on

migration are estimated by using data from a single Labour Force Survey by using the 1984 survey. The third effect, however, cannot be estimated by using data from a single year, so they estimate the same regression for a second year with different aggregate unemployment, 1977. Additionally, they explain the role of unemployment in the context of a simple human capital model of mobility and describe the data used for their study. According to their discussion of the effects of unemployment on mobility in 1983-1984, they find that, unemployment has a strong effect on the likelihood that those who experience it will migrate but that regional differentials in unemployment and vacancies do not appear to exert an independent influence on migration. In contrast, they mention that the regional differentials in wages have a strong effect on migration. They conclude that households living in regions where their relative occupational earnings are high are less likely to move than similar households living in other regions. Combined with the effect of unemployment, regions with high unemployment and low relative earnings are likely to have higher out-migration than other regions.

Gupta (1993) shows the simultaneous existence of open unemployment and informal sector in the urban area in migration equilibrium. In this study, a theoretical Harris and Todaro (1970) type model of rural-urban migration has been developed with special reference to the informal sector. In conclusion, this study supplies theoretical justifications of the price subsidy policy to the informal sector. A policy that leads to more food production, such as subsidy to rural employment, causes the amount of food available for urban consumption to expand. So the urban labor force expands. According to him, a subsidy to urban formal sector employment raises the demand for labor. But it doesn't affect the availability of food and hence the urban labor force. So the urban unemployment is reduced. His policy suggestion is such that the price subsidy to the urban informal sector improves the social welfare; but the capital subsidy policy to the urban informal sector worsens the welfare of the society. An increase in the wage subsidy to the urban sector lovers the equilibrium level of unemployment in the urban sector. But an increase in the wage or price subsidy to the rural sector raises the unemployment level.

A theoretical framework for analyzing the interaction between migration, unemployment, capital formation, and economic growth is produced by Bencivenga and Smith (1997). They use a two-period, overlapping generations model that contains an urban and a rural production sector. They conclude that the presence of the underemployment allows urban-rural wage differentials to vary over time and with the level of economic development. And thus, as in Harris and Todaro (1970), the process of rural-urban migration is equilibrated by the rate of urban underemployment in the context of their model.

Shan, Morris and Sun (1999) contribute to the debate on immigration and unemployment in Australia and New Zealand. They investigate a possible causal linkage between these variables in a six-variable vector autoregression (VAR) model using an econometric method: Granger no-causality testing procedure. The results suggest no Granger causality running between immigration and unemployment and hence the results reported in their studuy do not support the argument that immigrants displace Australians and New Zealanders from jobs. In addition, they find a two-way causality running between capacity utilisation and immigration.

To develop a theoretical model like Gupta's to show the simultaneous existence of the urban informal sector and open unemployment in the urban sector, Chaudhuri (2000) builds up a Harris-Todaro type of model of rural-urban migration. In conclusion, a capital subsidy policy to the urban sector may not be able to solve the urban unemployment problem. But a wage and/or a price subsidy policy to the rural sector and/or a demand management policy, like an export promotional scheme, in the manufacturing sector reduce the level of urban unemployment. The results of Chaudhuri (2000) are different from those found in Gupta (1993). He suggests that a rural development program or a demand management policy is a possible solution to the urban unemployment problem, and the policy prescriptions are similar to those generated by the standard Harris-Todaro (1970) migration model.

Furthermore, Zhang and Song (2003) conduct a study to assess the role of the city ward migration in China's urbanization in 1978–1999. As a result they find that, excessive rural–urban migration may create serious problems of unemployment and poverty due to limited absorption capacity of both industry and urban social services.

The objectives of Saracoğlu and Roe (2004)'s study are to fully identify the channels through which segmentation in capital markets in developing countries induces migration from rural to urban regions, and to explain how uneven regional economic growth may emerge as a consequence of imperfections in capital markets. This essay extends the standard Ramsey-type growth model to include a capital market failure and households' endogenous residency decisions in a regional, multi-sectoral environment. They examine two cases: the economy with segmentation in its rural and urban capital markets, and the same economy where they are integrated. They conclude that, in an economy with a large rural population and segmentation in its capital markets, a policy change in the economy induces migration from rural to urban areas, and this migration continues along the transition path to new long run equilibrium. They detect large drops in output of the rural sectors are, whereas the outputs of the urban sectors grow. However, the same economy reacts to the same policy change much differently after this economy undergoes an institutional reform such as the integration of its capital markets. According to Saracoğlu and Roe, as the economy adjusts to a new equilibrium once a policy change is introduced, relative to the case with segmented capital markets, no large changes in the macroeconomic variables occur. In particular, in the integrated capital markets environment, even after a policy change that prompts the urban wages to increase, rural residents choose to remain in the rural region. In terms of regional growth, after the policy change is introduced, initially, total output in urban region grows, and total output in rural region recedes in the segmented capital markets environment. In transition to new long run equilibrium, they observe growth over time in both regions, but rural region output still remains below its base level. Total output in both regions grows initially and in transition in the integrated capital markets model, though urban output grows more rapidly. Nevertheless, the output growth gap between the urban and rural

regions is not as large in the integrated capital markets environment as in the segmented capital markets environment. They conduct the policy experiment by lowering the labor tax rates levied on the employers in urban manufacturing sector, namely the urban formal sector.

Yüceol (2007) conducts a study to analyzing the relation between the regional labor movements and regional unemployment rates in Turkey. He determines the correlation between the regional unemployment rates and regional labor movements using the nuts level 2 statistics obtained from TURKSTAT. He find that there is a weak relation between the regional labor movements and regional unemployment rates in Turkey and this could be an evidence that the movement is from the regions with high unemployment levels to the regions with low unemployment levels. He proposes that labor mobility can be used as a policy tool to solve the problems of unemployment and labor market disequilibrium.

To resolve empirically the relationship between immigration in Canada and its unemployment rate since the 1960s, Islam (2007) conducted a study. The objective of this study is to examine the long- and short-run dynamics of unemployment and immigration. In doing so he uses bidirectional causality test, cointegration tests and a causality test based on the vector error correction model. The conclusion of his studies shows that, the bidirectional causality test finds no evidence of a significant effect of Canadian immigration on unemployment. Cointegration tests indicate that there is no observed increase in aggregate unemployment due to immigration in the long run. The results from the causality test based on the vector error correction model confirm that, in the short run, past unemployment does cause (less) immigration but not vice versa. There is also a long-run positive relationship among per-capita GDP, immigration rate and real wages. The results indicate that, in the short-run, more immigration is possibly associated with attractive Canadian immigration policies, and in the long-run, as the labor market adjusts; Canadian born workers are likely to benefit from increased migration. From a policy point of view he suggests that Canadian policy-makers should pursue current immigration policies

and that decreasing admissions below the current level of immigrants is not desirable.

In their study about migration and regional convergence, Saraçoğlu and Kırdar (2007) provides empirical evidence for the negative causal impact of migration on provincial growth rates in Turkey with a high level of internal migration that is characterized by unskilled labor exiting rural areas for urban centers during the 1975-2000 period. In doing so, they utilize an instrumental variables estimation method[18] with an instrument unique to Turkey, and they also control for provincial fixed effects. They find that conditional convergence hypothesis holds in Turkey and as the number of regional fixed effects increase by allowing the structural disparities to exist in smaller units of geographical areas, the rate of conditional convergence increases. In addition they find that, compared to the baseline Istanbul region, the provinces in Western and Eastern Marmara, Aegean, Western Anatolian and Mediterranean regions converge towards a relatively higher per capita income, whereas the provinces in Northeastern Anatolian and Mid-eastern Anatolian regions converge towards a relatively lower per capita income. When migration is included it is observed that migration has a strong impact on both regional growth rates and on the speed of convergence in Turkey. They also observed that holding internal migration constant decreases the speed of convergence implying that internal migration indeed speeds up convergence across Turkish provinces.

[18] They use a 2SLS estimation using population density and state of emergency status of provinces as instruments for migration.

CHAPTER 3

RURAL-URBAN MIGRATION AND UNEMPLOYMENT IN THE CASE OF TURKEY

In this Chapter, migration and labor market in Turkey will be discussed using the statistical data obtained from TURKSTAT. In this respect, historical background of rural-urban migration in Turkey, the numerical indicators of migration and unemployment in Turkey, social and economic characteristics of migrated population and labor market in Turkey will be deeply analyzed.

3.1. Rural-Urban Migration in Turkey

The urbanization process in the developing countries cities, and also in Turkey, is outrunning the ability of the urban system to provide adequate numbers of housing, jobs, and basic services such as running water and sanitation conditions, for migrants newly arrived whom are seeking employment. The reason for this migration from rural to urban areas is the poor living and working conditions in rural areas of Turkey. This population inflow to the cities, over burdens the capacity of urban governments to provide employment, housing, basic services, and sanitation living conditions for the citizens (Tatlıdil, 2004).

Table 3.1: Development of Rural and Urban Population in Turkey (1965-2004)

YEARS (1)	Total Population	Urban Population (2)	Proportion of Urban Population (%)	Rural Population	Proportion of Rural Population (%)	Urbanization Rate	
						Periods	(%)
1970	35,605,176	10,221,530	28.7	25,383,646	71.3	**1965-1970**	5.3
1975	40,347,719	13,271,801	32.9	27,075,918	67.1	**1970-1975**	5.4
1980	44,736,957	16,064,681	35.9	28,672,276	64.1	**1975-1980**	3.9
1985	50,664,458	23,238,030	45.9	27,426,428	54.1	**1980-1985**	7.7
1990	56,473,035	28,958,300	51.3	27,514,735	48.7	**1985-1990**	4.5
2000	67,420,000	38,660,969	57.3	28,759,031	42.7	**2000**	2.9
2001	68,407,000	39,708,871	58.0	28,698,129	42.0	**2001**	2.7
2002	69,388,000	40,823,268	58.8	28,564,732	41.2	**2002**	2.8
2003	70,363,000	41,924,098	59.6	28,438,902	40.4	**2003**	2.7
2004	71,332,000	43,036,058	60.3	28,295,942	39.7	**2004**	2.7

Source: TURKSTAT, SPO website.
Notes: (1) Years between 1970-2000 are census date results. Years between 2000-2004 are mid-year estimations
(2) Urban refers to areas with population of 20.000 or more.

Turkey is facing the unskilled labor migration from the less developed rural regions to more developed urban regions. According to the Table 3.1, in 1980, percentage of urban population was 35.9 percent and rural population was 64.1 percent. In 1990 the percentage of rural population decreased to 52.3 percent and the proportion of urban population increased to 48.7 percent. A significant part of this migrated population lives in the squatter settlements (gecekondu) in cities with unhealthy environmental conditions and insufficient job and income possibilities. The average urbanization rate between 1975 and 1990 was 5.36 percent. This can be seen from the Table 3.1.

Chances on economic and social structure of Turkey after 1950's changed the movements from rural areas to urban cities especially to city centers.

The social and economic pressure of the World War II also effected Turkey as well as other countries and caused people to change their way of life. The economic policies favoring agriculture caused a very large amount of unemployment among traditional agricultural workers on account of the inputs of Marshall Aid[19] such as tractors and other cultivating technologies. Apart from unemployment emerging due to technology transfers in agriculture sector, rural-urban migration was also triggered by the high birth rates of rural areas. The unemployed population of agricultural workers started to move to the employee needed cities to find jobs in other fields (Tatlıdil, 2004).

Tatlıdil (ibid) stressed in his study that, since 1950s the patterns of population and settlement have been changing in Turkey. Turkish villages, towns and cities as socio-economic units have been involved in rapid process. The settlement of population has been spreading rapidly towards urban areas, which means, Turkish population has been directed towards towns or cities (TURKSTAT, 2000).

Beginning from 1950s Eastern Thrace, Aegean, Central Anatolia, and Çukurova regions have had substantial net migration gains; the western part recorded a net migration gain when compared with the eastern part of Turkey. South East Anatolia, Black Sea, Eastern Anatolia Regions, and some Central Anatolia provinces experienced net migration losses, as a result of migration between regions.

> In fact, the Turkish migration movement shows as a general characteristic, movement from rural to urban areas, most economically developed large cities are situated in the western part of Turkey. The urbanization rate in the three under-developed regions of Turkey fell below the national urbanization rate[20] until recently (Tatlıdil, 2004:21).

19 Marshall Aid, offered to European countries, including Turkey, in June 1947, was rooted in American interests to revive the European economy as a strong trading partner, and to strengthen Europe politically against further Soviet expansion westward (Üstün, 1997). Marshall Plan had a big role in the social transformation; especially the implemented politics in agriculture and transportation were among the accelerating elements of the urbanization movement in Turkey (Birinci, 2007).

20 The urbanization rate is the share of population in cities (Schmidt-Hebbel et al., 1992).

3.1.1. The Numerical Indicators of Migration in Turkey

As such in all countries, the main reasons for the internal migration in Turkey are economic, social, cultural, geographic, demographic and political. However, most of the internal migrants in Turkey change their permanent residence because of the economic reasons. Therefore regional and individual income distribution differences effects the internal migration phenomenon.

It is recorded that, twenty-five per cent of the migrants in Turkey give the migration decision because of the economic reasons. This rural-urban migration takes root mostly from the high income levels of the regions with high net migration rates, rather than the low income levels of the regions with low net migration rates (Yamak and Yamak, 1999). Here, high income level of the place of destination is a pull factor for the Turkish migrants. According to their findings from their study, Yamak and Yamak (ibid) state that, at the provinces with high net migration rates, 70 percent of the migrants who came to that province have moved from his/her origin because of economic reasons.

There is a large difference between eastern and western regions of Turkey in terms of income levels. And this regional income distribution disequilibrium in Turkey worsens every year. For instance, according to Table 3.2, the disequilibrium in income distribution can be seen clearly. For instance, the GDP (Gross Domestic Product) per capita (1987 prices) of Mideastern Anatolian Region is 354,825TL and it is 4,923,288 TL in İstanbul Region in the year 1980. In the same way for the year 1990, the GDP per capita (1987 prices) of İstanbul region is 6,505,879 TL and it is 524,191 TL in Northeastern Anatolian Region.

Table 3.2: Gross Domestic Product per capita- 1987 Prices (TL)

Nuts 1	1980	1985	1990
İstanbul Region	4,923,288	5,590,042	6,505,879
Western Marmara Region	1,655,461	1,904,693	2,304,155
Aegean Region	1,719,734	1,997,239	2,384,131
Eastern Marmara Region	1,307,908	1,565,927	1,929,716
Western Anatolian Region	3,528,439	3,806,805	4,760,161
Mediterranean Region	718,981	697,207	875,468
Mid-Anatolian Region	542,281	600,918	623,313
Western Blacksea Region	497,289	502,501	558,768
Eastern Blacksea Region	887,150	906,523	1,056,552
Northeastern Anatolian Region	474,652	514,436	524,191
Mid-Eastern Anatolian Region	354,825	382,850	408,622
Southeastern Anatolian Region	880,524	1,066,181	1,433,666

Source: TURKSTAT, website.

Compared to the average per capita GDP of Turkey in both years, it is reasonably high in west regions and low in east regions of Turkey. This can also be seen in Table 3.2. This income distribution disequilibrium between the regions is expected to cause internal migration from less developed regions to developed regions in Turkey.

Table 3.3: Turkey's Net Migration Rates (‰) for the Years 1975 - 2000 (Nuts Level 1 Statistical Regions)

STATISTICAL REGIONS	1975-1980	1980-1985	1985-1990	1995-2000
İstanbul Region	67.27	56.53	99.86	46.1
Western Marmara Region	-3.78	-1.18	3.08	26.1
Aegean Region	21.79	13.37	25.52	22.9
Eastern Marmara Region	38.52	27.26	41.95	15.9
Western Anatolian Region	9.59	5.65	8.75	15.9
Mediterranean Region	12.4	14.87	19.94	0.4
Mid-Anatolian Region	-27.14	-23.9	-49.21	-24.9
Western Blacksea Region	-18.95	-23.09	-46.54	-50.3
Eastern Blacksea Region	-35.58	-36.94	-70.57	-26.1
Northeastern Anatolian Region	-71.54	-58.27	-113.38	-49.8
Mid-Eastern Anatolian Region	-43.45	-32.62	-59.01	-33.4
Southeastern Anatolian Region	-30.39	-20.36	-30.33	-36.2

Source: TURKSTAT, 2004.

As can be seen from the Table 3.3, the path of migration in Turkey is from east to the west. People leave their permanent residence in search of employment in Turkey. According to the "Unemployment's Migration Map" report that has been prepared by Foundation and Development of the Chamber of Certified Public Accountants of İstanbul (2007) using the data obtained from TURKSTAT, Hacettepe University Institute of Population Studies and World Bank, the cities which gives hope for the unemployed are Istanbul, İzmir, Antalya, Adana and Mersin.

3.1.1.1. The Provinces from Which People Migrate Most

When the size of the migration is considered, İstanbul, Ankara and İzmir are the first three provinces that have highest out migration (TURKSTAT, 2005). Accordig to the Table 3.4 ,the first ten provinces with the highest out-migration rates in 1980-1985 period are, Ağrı, Artvin, Muş, Sivas, Erzurum, Bayburt, Gümüşhane, Siirt, Tunceli, Kars. The first ten provinces with the highest out-migration rates in 1995-2000 period are, İstanbul, Ankara İzmir, Adana, Kocaeli, Samsun, Diyarbakır, Konya, İçel and Erzurum. This can be seen from the Table 3.4. During this period, people

migrated from İstanbul, Sakarya and Kocaeli mostly because of the earthquakes. They left Ankara and Konya mostly because of designation and appointment, İzmir, İçel and Adana for educational reasons, Samsun for seeking or getting a new job, Diyarbakır and some other East provinces for security reasons, etc.

Table 3.4: The Ten Provinces with the Highest and Lowest Net Migration Rates (1965_2000)

(%o)

1965-1970		1970-1975		1975-1980		1980-1985		1985-1990		1995-2000	
Provinces	Net Migration Rate	Provinces	Net Migration Rate	Provinces	Net Migration Rate	Provinces	Net Migration Rate	Provinces	Net Migration Rate	Provinces	Net Migration Rate
10 Provinces with the Highest Net Migration Rates											
İSTANBUL	207,10	İSTANBUL	127,46	KOCAELİ	100,28	KOCAELİ	61.71	İSTANBUL	99.86	TEKİRDAĞ	96 81
ANKARA	. 122.43	İZMİR	88.68	İSTANBUL	67,27	İSTANBUL	56.53	KOCAELİ	99,22	MUĞLA	70.2
İZMİR	8.1.13	ANKARA	70,16	İZMİR	65.95	İÇEL	52.92	ANTALYA	81.78	ANTALYA	64.31
EDİRNE	76.74	Bl RSA	57.89	BURSA	55,89	BURSA	3S.4S	İÇEL	64.94	BİLECİK	57,91
KOCAELİ	55.08	ANTALYA	34,43	İÇEL	51,94	İZMİR	38,39	İZMİR	58,34	İSTANBUL	46.09
KONYA	27.28	TEKİRDAĞ	31.08	ANTALYA	24.22	ANTALYA	30,92	BURSA	57,15	BURSA	45.12
BURSA	23.72	KAYSERİ	29,44	ANKARA	18,52	ADANA	15,05	TEKİRDAĞ	41.09	İZMİR	39,88
ELAZIĞ	18.57	HATAY	28,08	HATAY	17,80	ESKİŞEHİR	15,04	MUĞLA	30,51	İSPARTA	30.72
AYDİN	17.13	İÇEL	24.44	ESKİŞEHİR	15.05	AYDIN	13,43	AYDIN	24,3.3	ÇANAKKALE	27.39
ESKİŞEHİR	15.66	GAZİANTEP	13.29	AYDIN	15,03	SAKARYA	12,28	ANKARA	22,62	ANKARA	25.59
10 Provinces with the Lowest Net Migration Rates											
II M ELI	-79.9	AMASYA	-57.24	ARTVİN	-55,42	ERZİNCAN	-39,78	AĞRI	-86,95	MUŞ	-59.82
AMASYA	-81.25	ÇANKIRI	-66,51	ŞANLIURFA	-58.55	GİRESUN	-40,61	ARTVİN	-92.77	KARS	-61.15
ÇANKIRI	-83,96	NİĞDE	-69.03	MUŞ	-59.34	MUŞ	-44,64	MUŞ	-94,49	ARTVİN	. -63.56
SAMSUN	-84.25	AFYON	-78.27	ERZURUM	-59,46	ARTVİN	-47.67	SİVAS	-99,31	MARDİN	-67.58
NİĞDE	-87,33	ŞANLIURFA	-79,65	SİVAS	-67,37	AĞRI	-48,10	ERZURUM	-103,61	ADIYAMAN	-70.23
SİNOP	-94,28	ADIYAMAN	-86.61	AĞRI	-71,49	SİVAS	-49,49	BAYBURT	-127,50	ZONGULDAK	-73.82
KIRŞEHİR	-96.31	BİTLİS	-95,40	BİTLİS	-73,66	GÜMÜŞHANE	-50,28	GÜMÜŞHANE	-128,85	ŞİİRİ	-75.06
BİLECİK	-1 18,01	RİZE	-96,70	GÜMÜŞHANE	-76,44	ERZURUM	-58,79	SİİRT	-132.64	SİNOP	-75.ir
NEVŞEHİR	-134,43	BİLECİK	101,05	TUNCELİ	-81.88	KARS	-70.87	TUNCELİ	-143,55	BARTIN	-86.^8
HAKKARİ	-158,70	TUNCELİ	109.18	KARS	100,52	TUNCELİ	-114.79	KARS	-151.71	ARDAHAN	-106.72

Kocaman, 2008, [TURKSTAT, 2005].

Table 3.5: Reasons for Migration - Percentage Shares of Migration in Ten Provinces with Lowest Net Migration Rates (1995-2000)

		Reasons for migration																	
Proportion of Total Migrated Population		Seek a job - get a job		Designation - Appointment		Migration Depending on one of the Household		Education		Marriage		Earthquaqe		Security		Other		Unknown	
10 Provinces with highest out-migration Rates	Percentage	10 Provinces with highest out-migration Rates	Percentage	10 Provinces with highest out-migration Rates	Percentage	10 Provinces with highest out-migration Rates	Percentage	10 Provinces with highest out-migration Rates	Percentage	10 Provinces with highest out-migration Rates	Percentage	10 Provinces with highest out-migration Rates	Percentage	10 Provinces with highest out-migration Rates	Percentage	10 Provinces with highest out-migration Rates	Percentage	10 Provinces with highest out-migration Rates	Percentage
İstanbul	10,72	İstanbul	6,88	Ankara	9,76	İstanbul	9,71	İstanbul	8,26	İstanbul	7,35	İstanbul	30,95	İstanbul	9,40	İstanbul	19,06	İstanbul	11,68
Ankara	5.98	Ankara	4,17	İstanbul	7,28	Ankara	5,62	Ankara	6,33	Ankara	4,73	Kocaeli	28,67	Diyarbakır	7,92	Ankara	7,20	Ankara	5,19
İzmir	3,88	Samsun	3,14	İzmir	4,41	İzmir	3,50	İzmir	5,34	İzmir	3,25	Sakarya	15,67	Mardin	6,24	İzmir	4,96	İzmir	3,55
Adana	2,78	İzmir	3,10	Diyarbakır	2,78	Diyarbakır	2,88	Adana	3,62	Samsun	2,91	Yalova	6,80	Siirt	4,43	Adana	2,80	Adana	2,79
Kocaeli	2,49	Diyarbakır	2,96	Konya	2,69	Adana	2,62	İçel	3,37	Adana	2,64	Bolu	4,69	Bingöl	4,41	Bursa	2,43	Şanlıurfa	2,76
Samsun	2,32	Şanlıurfa	2,84	Adana	2,54	Erzurum	2,56	Bursa	2,92	Konya	2,58	Düzce	4,04	Hakkari	4,33	Antalya	2,24	Diyarbakır	2,31
Diyarbakır	2,32	Adana	2,76	Erzurum	2,40	Sn nlıurfa	2,31	Ha tay	2,66	Ordu	2,28	Adana	2,57	Sırnak	3,84	Konya	2,09	Konya	2,20
Konya	2,18	Ordu	2,40	Samsun	2,03	Samsun	2,21	Konya	2,62	Sivas	2,24	Bursa	1,71	Muş	3,66	İçel	2,01	Samsun	2,15
İçel	2,08	Erzurum	2,15	Bahkesir	2,01	Konya	2,11	Antalya	2,62	Erzurum	2,12	Afyon	0,84	Tunceli	3,33	Kocaeli	1,95	İçel	2,15
Erzurum	2,03	Zonguldak	2,13	Malatya	1,90	İçel	2,01	Samsun	2,49	Yozgat	1,98	İzmir	0,53	Van	3,05	Diyarbakır	1,87	Mardin	2,05
Total of 10 Provinces	36,78	Total of 10 Provinces	32,53	Total of 10 Provinces	37,8	Total of 10 Provinces	35,53	Total of 10 Provinces	40,23	Total of 10 Provinces	32,08	Total of 10 Provinces	96,47	Total of 10 Provinces	50,61	Total of 10 Provinces	46,61	Total of 10 Provinces	36,83
Total of 71 Provinces	63,22	Total of 71 Provinces	67,47	Total of 71 Provinces	62,2	Total of 71 Provinces	64,47	Total of 71 Provinces	59,77	Total of 71 Provinces	67,92	Total of 71 Provinces	3,53	Total of 71 Provinces	49,39	Total of 71 Provinces	53,39	Total of 71 Provinces	63,17
Total 81 Provinces	100,00	Total 81 Provinces	100,00	Total 81 Provinces	100,00	Total 81 Provinces	100,00	Total 81 Provinces	100,00	Total 81 Provinces	100,00	Total 81 Provinces	100,00	Total 81 Provinces	100,00	Total 81 Provinces	100,00	Total 81 Provinces	100,00

Source: Kocaman, 2008, [TURKSTAT, 2005].

According to TURKSTAT (2005), in the year 2000, after the 1999 Marmara and Düzce earthquakes, approximately 147 thousand people migrated. Among this migrated population, 13.1 percent migrated to İstanbul, 7.5 percent to Ankara, 5.3 percent to Trabzon and 4.6 percent to Antalya.

For the year 2000, according to the Table 3.7 obtained from TURKSTAT data, Ardahan, Adıyaman, Ağrı, Artvin, Bingöl, Çorum, Erzurum, Kars, Mardin, Muş, Siirt, Sinop, Zonguldak, Bayburt and Bartın are the provinces with the highest

number of migrants who left their home in Turkey. For instance the province with the lowest net migration rate, which means the province which people leave their home most, is Kars with the rate of -15.2 percent for the year 1990. This can be seen in Table 3.6.

Table 3.6: Summary for Turkey's Net Migration Rates (%) for the Years 1980, 1985 and 1990

Variable	Obs.	Mean	Std. Dev.	Min.	Max.
Mig1980	67	-1.587881	3.671603	-10.052 (Kars)	10.028 (Kocaeli)
Mig1985	67	-1.467478	2.972342	-11.479 (Tunceli)	6.171 (Kocaeli)
Mig1990	67	-2.916642	5.319211	-15.171 (Kars)	9.986 (İstanbul)

Note: TURKSTAT 2000 net migration rates were used.

In the year 1980, the province with the lowest net migration rate is Kars (-10.052 percent) and the province with the highest net migration rate is Kocaeli (10.028 percent). This can be seen from Table 3.6.

In the same way for the year 1985, observed from the Table 3.6, the province with the lowest net migration rate is Tunceli (-11.479 percent) and the province with the highest net migration rate is again Kocaeli (6.171 percent).

When we look at the 1990 data, based on Table 3.6, the province with the lowest net migration rate is Kars with the net migration rate -15.171 percent and the province with the highest net migration rate is İstanbul with the net migration rate 9.986 percent.

Table 3.7: Adjusted Net Migration Rates (%)

Provinces	1975-1980 Net Mig. Rates (%)	1980-1985 Net Mig. Rates (%)	1985-1990 Net Mig. Rates (%)	1995-2000 Net Mig. Rates (%)
ADANA	0,097	1,505	1,471	-2,414
ADIYAMAN	-3,176	-3,402	-3,681	-7,02
AFYON	-2,258	-2,497	-3,666	-2,25
AĞRI	-7,149	-4,81	-8,695	-5,64
AMASYA	-2,203	-2,982	-5,567	-2,68
ANKARA	1,852	1,208	1,77	2,56
ANTALYA	2,422	3,092	8,178	6,43
ARTVİN	-5,542	-4,767	-9,277	-6,36
AYDIN	1,503	1,343	2,433	2,55
BALIKESİR	-0,733	0,374	0,515	0,49
BİLECİK	-0,231	0,716	1,789	5,79
BİNGÖL	-4,828	-3,946	-8,047	-5,01
BİTLİS	-7,366	-3,299	-6,491	-2,12
BOLU	-0,104	-0,998	-0,797	-1,507
BURDUR	-0,671	-1,67	-3,51	-2,27
BURSA	5,589	3,848	5,715	4,51
ÇANAKKALI	-0,346	-0,447	-0,481	2,74
ÇANKIRI	-5,257	-3,492	-5,7	-1,83
ÇORUM	-4,231	-3,023	-5,609	-5,84
DENİZLİ	-0,531	0,332	1,49	1,99
DİYARBAKIR	-2,194	-1,461	-3,174	-4
EDİRNE	-0,767	-1,453	-1,887	-1,4
ELAZIĞ	-4,03	-2,956	-4,311	-2,38
ERZİNCAN	-3,255	-3,978	-8,534	-0,47
ERZURUM	-5,946	-5,879	-10,361	-5,48
ESKİŞEHİR	1,505	1,504	1,052	1,48
GAZİANTEP	-0,155	-0,462	-0,046	-0,044
GİRESUN	-3,711	-4,061	-6,973	-1,21
GÜMÜŞHANE	-7,644	-5,028	-12,83	-3,6
HAKKARİ	-1,448	-0,614	-2,874	-1,25
HATAY	1,78	0,545	-0,379	-3,39
ISPARTA	-0,8	-1,399	-1,589	3,07
İÇEL	5,194	5,292	6,494	1,24
İSTANBUL	6,727	5,653	9,986	4,54
İZMİR	6,595	3,839	5,834	3,99
KARS	-10,052	-7,087	-15,171	-5,796
KASTAMONU	-2,395	-2,459	-6,128	-3,28
KAYSERİ	1,481	-0,624	-1,771	-0,35
KIRKLARELİ	-1,125	-0,767	-1,817	1,8
KIRŞEHİR	-3,515	-2,4	-7,594	-4,51
KOCAELİ	10,028	6,171	9,922	0,02
KONYA	-0,668	-0,625	-1,405	0,0007
KÜTAHYA	0,101	0,007	-0,821	-0,18
MALATYA	-3,911	-2,031	-5,148	-2,15
MANİSA	1,005	0,66	1,902	0,32
K.MARAŞ	-1,184	-1,329	-3,918	-2,83
MARDİN	-5,316	-2,869	-6,633	-6,76
MUĞLA	0,406	0,665	3,051	7,02
MUŞ	-5,934	-4,464	-9,449	-5,98
NEVŞEHİR	-1,343	-0,514	-3,776	-0,71
NİĞDE	-1,46	-2,078	-2,98	-0,81
ORDU	-2,986	-3,276	-5,376	-4,47
RİZE	-2,404	-3,06	-7,947	-2,19
SAKARYA	0,841	1,228	0,982	-2,31
SAMSUN	-1,149	-1,291	-2,757	-4,55
SİİRT	-2,628	-3,755	-4,121	-3,24
SİNOP	-2,875	-3,513	-8,278	-7,57
SİVAS	-6,737	-4,949	-9,935	-5,1
TEKİRDAĞ	1,448	0,905	4,109	9,68
TOKAT	-2,735	-2,571	-6,54	-4,84
TRABZON	-2,329	-3,356	-6,51	-1,11
TUNCELİ	-8,188	-11,479	-14,355	-3,67
ŞURFA	-5,855	-2,042	-2,984	-3,89
UŞAK	-0,462	-1,121	0,203	-0,69
VAN	-1,775	-2,36	-3,508	-4,36
YOZGAT	-4,346	-2,715	-6,137	-4,19
ZONGULDAK	0,986	-1,849	-2,773	-6,907

Source: TURKSTAT, 2004

Note: Data are adjusted according to 67 regions.

3.1.1.2. The Provinces to Which People Migrate Most

According to the Table 3.8, the provinces with the highest net migration rates in the period 1985-1990 are; Kocaeli, İstanbul, İçel, Bursa, İzmir, Antalya, Adana, Eskişehir, Aydın and Sakarya. When we look at the data obtained from TURKSTAT (2005), we see that, İstanbul, Ankara and İzmir are also in the first three ranks for the provinces with the highest in-migrated provinces for the period 1995-2000. The leading provinces with highest net migration rates following the first three are; Bursa, Antalya, Kocaeli, İçel, Konya, Adana, Tekirdağ. During this period, people migrated to İstanbul, Antalya, Tekirdağ and İzmir mostly for getting a new job or for new job opportunities, to Ankara and Konya because of educational reasons, to Bursa and İçel depending on one of the household, to Kocaeli depending on marital reasons and to Adana for security and etc.

Table 3.8: Reasons for Migration - Percentage Shares of Migration in Ten Provinces with Highest Net Migration Rates (1995-2000)

		Reasons for migration															
Proportion of Total Migrated Population		Seek a job - get a job		Designation - Appointment		Migration Depending on one of the Household		Education		Marriage		Earthquaqe		Security		Other		Unknown	
10 Provinces with highest in-migration Rates	Percentge share	10 Provinces with highest in-migration	Percentge share	10 Provinces with highest in-migration	Percentge share	10 Provinces with highest in-migration	Percentge share	10 Provinces with highest in-migration	Percentge share	10 Provinces with highest in-migration	Percentge share	10 Provinces with highest in-migration	Percentge share	10 Provinces with highest in-migration	Percentge share	10 Provinces with highest in-migration Rates	Percentage	10 Provinces with highest in-migration	Percentge share
İstanbul	19,23	İstanbul	30,18	İstanbul	8,62	İstanbul	19,51	İstanbul	14,68	İstanbul	28,62	İstanbul	13,14	İstanbul	14,30	İstanbul	14,82	İstanbul	15,44
Ankara	7,88	İzmir	7,35	Ankara	7,96	Ankara	7,89	Ankara	11,56	Ankara	9,26	Ankara	7.54	İçel	6,03	Ankara	6,26	İzmir	7,50
İzmir	6,40	Ankara	6,85	İzmir	6,31	İzmir	6.51	İzmir	5,52	İzmir	6,75	Trabzon	5,31	Van	4,99	İzmir	6,04	Ankara	5,70
Bursa	3,76	Antalya	5,55	Antalya	2,72	Bursa	4,71	Konya	4,07	Bursa	4,05	Antalya	4,57	İzmir	4,41	Antalya	3,02	Antalya	4,09
Antalva	3,59	Hırsa	4.36	Bursa	2,65	Antalya	3,74	Bursa	3,31	Kocaeli	3,46	İzmir	4,08	Diyarbakır	4,09	Kursa	2,79	Adana	2,36
Kocaeli	2,49	Kocaeli	3,24	Divarbakır	2,41	İçel	3,19	Erzurum	2.89	Antalva	2,89	Bursa	4,08	Ankara -	3,82	İçel	2 .4	İçel	2,15
İçel	2.46	Muğla	2,64	Konva	2,35	Kocaeli	2,71	Trabzon	2,46	Adana	2,41	Samsun	2,82	Elazığ	3,41	Balıkesir	2,34	Diyarbak	2,07
Konya	2,24	Tekirdağ	2,53	İçel	2,17	Konya	2,42	Eskişehir	2,41	İçel	1,97	Konya	2,75	Adana	3,26	Kocaeli	2,18	Bursa	2.06
Adana	1,94	İçel	2,25	Adana	2,09	Tekirdağ	2,27	İsparta	2,13	Tekirdağ	1,70	Ordu	2,51	Bingöl	3,02	Tekirdağ	2,04	Ayıı.n	1,99
Tekirdağ	1,85	Aydın	1,94	Balıkesir	1,97	Adana	2,25	Kütahya	2,01	Gaziantep	1,57	Giresun	2.44	Bolu	2,78	Manisa	1,94	Kocaeli	1,97
Total of 10 Provinces	51,84	Total of 10 Provinces	66,89	Total of 10 Provinces	39,25	Total of 10 Provinces	55,19	Total of 10 Provinces	51,1)4	Total of 10 P	62,68	Total of 10	49,24	Total of 10	50,11	Total of 10 Pro	43,77	Total of 10 Provinces	45,33
Total of 71 Provinces	48,16	Total of 71 Provinces	33,11	Total of 71 Provinces	60.75	Total of 71 Provinces	44,81	Total of 71 Provinces	48,96	Total of 71 Provinces	37,32	Total of 71 Provinces	50,76	Total of 71 Provinces	49,89	Total of 71 Provinces	56,23	Total of 71 Provinces	54,67
Total 81 Provinces	100,00	Total 81 Provinces	100,00	Total 81 Provinces	100,00	Total 81 Provinces	100,00	Total 81 Provinces	100,00	Total 81 Provinces	100,00	Total 81 Provinces	100,00	Total 81 Provinces	100,00	Total 81 Provinces	i ih um	Total 81 Provinces	100,00

Source: Kocaman, 2008

In the year 2000, the leading provinces which attracts the migrants most are; İstanbul, Ankara, İzmir, Mersin, Bursa, Bilecik, Antalya, Muğla and Tekirdağ. According to the Table 3.4, the province that attracts the highest number of migrants is Tekirdağ. Net migration rate of Tekirdağ is 9.7 percent for the year 2000.

When we look at the 1975-2000 period, the first three provinces that have high migration rate are, Ankara, İstanbul and İzmir, and in 1995-2000 period, approximately one fifth of migration between provinces has occurred to İstanbul (TURKSTAT, 2005).

3.1.2. Social and Economic Characteristics of Migrating Population

A brief summary of general profiles of migrated population between the years 1995 and 2000 is given in the Table 3.9. According to the table, 5 percent of the migrations are between the provinces and 28.5 percent of them are between settlements within the provinces for the period 1995-2000. With the ratio of 54.4 percent, male migrants are having a larger share in total migrated population, where female migrants[21] share is 45.5 percent.

Additionally nearly the half of the migrated population is below age 24. The generality of the migrated population is in 15-19, 20-24 and 25-29 age groups, and 49.2 percent of total migration was constituted of migrated population in 15-29 age groups (TURKSTAT, 2005).

[21] Most of the migrated man in Turkey gave the decision to migrate because of job search or designation, and most women gave the decision to migrate because of marriage or education. (Kocaman, 2008)

Table 3.9: General Profile of Migrated Population (1995-2000)

	Sex	Age group	Migrating population			Percentage shares		
Total migrating population	Total	All			6.692.263			100
Migrating population between provinces (1)	Total	All			4 788 193			71.5
Migrations between settlements within province	Total	All			1 904 070			28,5
Migrations from abroad	Total	All			234.111			3,5
Migrations between statistical rergions	Total	All			4098.356			61,2
Total migrating population	Total	All			6.692.263			100,0
	Male	All			3 643 375			54,4
	Female	All			3.048 888			45.6
From city to city	Total	All		3 867.979			57.8	
	Male	All	2 110 130			31,5		
	Female	All	1.757.849			26,3		
From village to city	Total	All		1 168285			17,5	
	Male	All	639 319			9,6		
	Female	All	528 966			7,9		
From city to village	Total	All		1 342.518			20.1	
	Male	All	730.646			10,9		
	Female	All	611.872			9.1		
From village to village	Total	All		313 481			4,7	
	Male	All	163 280			2.4		
	Female	All	150 201			2.2		
Migrating population - Age 6+	Total	Age 6+			6.579.940			100,0
	Male	Age 6+			3 584 830			54,5
	Female	Age 6+			2 995 110			45,5
From city to city	Total	Age 6+		j 805 748			57,8	
	Male	Age 6+	2 077 714			3.1,6		
	Female	Age 6+	1.728.034			26,3		
From village to city	Total	Age 6+		1 147 923			17.4	
	Male	Age 6+	628 701			9,6		
	Female	Age 6+	519.222			7.9		
From city to village	Total	Age 6+		1 318 893			20	
	Male	Age 6+	718.306			10,9		
	Female	Age 6+	600 587			9.1		
From village to village	Total	Age 6+		307.376			4,7	
	Male	Age 6+	160 109			2.4		
	Female	Age 6+	147.267			2,2		
Migrating population - Age 12+	Total	Age 12+			5.886.691			100,0
	Male	Age 12+			3 223 379			54,8
	Female	Age 12+			2.663 312			45,2
From city to city	Total	Age 12+		3 430 694			58,3	
	Male	Age 12+	1 884 287			32,0		
	Female	Age 12+	1.546.407			26,3		
From village to city	Total	Age 12+		1 009 085			17,1	
	Male	Age 12+	553.402			9,4		
	Female	Age 12+	455 683			7,7		
From city to village	Total	Age 12+		1 176 160			20,0	
	Male	Age 12+	644 585			10,9		
	Female	Age 12+	531.575			9,0		
From village to village	Total	Age 12+		270.752			4,6	
	Male	Age 12+	141.105			2,4		
	Female	Age 12+	129 647			2,2		
Migrating population - Age 25+	Total	Age 25+			3.241.137			100,0
	Male	Age 25+			1.771 825			54,7
	Female	Age 25+			1.469.312			45,3
From city to city	Total	Age 25+		1 870 241			57,7	
	Male	Age 25+	1 020 350			31,5		
	Female	Age 25+	849 891			26,2		
From village to city	Total	Age 25+		505 399			15,6	
	Male	Age 25+	271.975			8,4		
	Female	Age 25+	233 424			7.2		
From city to village	Total	Age 25+		727 670			22,5	
	Male	Age 25+	402.953			12,4		
	Female	Age 25+	324 717			10,0		
From village to village	Total	Age 25+		137 827			4,3	
	Male	Age 25+	76.547			2,4		
	Female	Age 25+	61.28			1,9		
Migrating population - Age 12+	Total	Age 12+			5.886.691			100,0
Labor Force (employed+unemployed)	Total	Age 12+			3.406 553			57.9
Employed	Total	Age 12+		3.095.975			52,6	
From city to city	Total	Age 12+	1 520 895			25.8		
From village to city	Total	Age 12+	426 341			7,2		
From city to village	Total	Age 12+	922.712			15.7		
From village to village	Total	Age 12+	226 027			3.8		
Unemployed	Total	Age 12+		310 578			5.3	
Not in Labor Forc	Total	Age 12+			2 479 355			42.1
Unknown	Total	Age 12+						0

Source: Kocaman, 2008, [TURKSTAT, 2005]

Notes: (1) Migrations between settlements within the provinces are excluded.

(2) Migrations between provinces within the same region are excluded

Table 3.10: Migrating Population According to the Settlements (1975-2000)

Settlement	1975-1980		1980-1985		1985-1990		1995-2000	
	Migrating Population	Percentage Share	Migrating Population	Percentage Share	Migrating Population	Percentage Share	Migrating Population	Percentage Share
From city to city	1.752.817	48.9	2.146.110	56,18	3.359.357	62,18	3.867.979	57.8
From village to city	610.067	17.02	860.438	22,53	969.871	17,95	1.168.285	17.46
From city to village	692.828	19.33	490.653	12,84	680.527	12,60	1.342.518	20,06
From village to village	528.709	14.75	322.709	8,45	392.935	7,27	313.481	4.68
Total	3.584.421	100,00	3.819.910	100,00	5.402.690	100,00	6.692.263	100,00

Source: Kocaman, 2008

According to the Table 3.10, most of the migration took place within Turkey in that period is from cites to cites with the ratio of 56.18 percent in 1980-1985 period, 62,18 percent during the 1985-1990 period and 57.8 percent in 1995-2000 period. It is followed by the migrations from villages to cities during the years 1980-1990, and for the period 1995-2000 migrations from cities to villages (20.1 percent). For the period 1980-1990 migrations from villages to cities (17.4 percent) is in the third rank and lastly migration from villages to villages has the smallest ratio. For the period 1995-2000, migration from villages to villages took the least share in this picture with the ratio of 4.7 percent. The share of employed migrants migrated from villages to cities, is only 7.2 percent in total migrated population, and the ratio of employed migrants migrated between cities is the highest (25.8 percent) in total migrated population in 1995-2000.

Table 3.11: Migrated Population by Labor Force (1995-2000) -Age 12 and Over

	Migrated Population			Percentage share		
	Total	**Male**	**Female**	**Total**	**Male**	**Female**
Employment status of migrated people (between provinces and within provinces)						
Labor force (employed+unemployed	**3.406.553**	**2.436.107**	**970.446**	**57,87**	**75,58**	**36,44**
employment	3.095.975	2.234.261	861.714	52,59	69.31	32.35
unemployment	310.578	201.846	108.732	5.28	6.26	4.08
Not in labor force	**2.479.855**	**787.048**	**1.692.807**	**42,13**	**24,42**	**63,56**
Sought a job without using any channel in the last three months	111.011	67.708	43.303	1,89	2.1	1,63
Student	884.152	516.143	368.009	15,02	16.01	13,82
Housewife	1.217.466	0	1.217.466	20,68	0	45.71
Retired	182.869	131.279	51.59	3,11	4,07	1.94
Income recipient	28.764	22.593	6.171	0,49	0,70	0,23
Other	55.593	49.325	6.268	0.94	1,53	0.24
Unknown	**283**	**224**	**59**	**0,00**	**0,01**	**0,00**
Total	**5.886.691**	**3.223.379**	**2.663.312**	**100,00**	**100,00**	**100,00**
Employment status of migrated people between provinces						
Labor force (employed+unemployed	**2.476.482**	**1.838.337**	**638.145**	**58,23**	**76,35**	**34,59**
employment	2.242.616	1.687.461	555.155	52,73	70,09	30,09
unemployment	233.866	150.876	82.99	5.5	6.27	4.5
Not in labor force	**1.775.967**	**569.129**	**1.206.838**	**41,76**	**23,64**	**65,41**
Sought a job without using any channel in the last three months	79.12	47.528	31.592	1.86	1.97	1.71
Student	654.867	377.227	277.64	15,40	15,67	15.05
Housewife	850.527	0	850.527	20,00	0	46.1
Retired	133.203	94.657	38.546	3,13	3.93	2.09
Income recipient	18.248	14.192	4.056	0,43	0,59	0,22
Other	40.002	35.525	4.477	0,94	1.48	0,24
Unknown	**236**	**190**	**46**	**0,01**	**0,01**	**0,00**
Total	**4.252.685**	**2.407.656**	**1.845.029**	**100,00**	**100,00**	**100,00**

Source: Kocaman, 2008, [TURKSTAT, 2005]

In the period 1995-2000, 5.3 percent of the total migrated population is unemployed. This can be seen in Table 3.11. According to the Table 3.13, migrated men have higher employment possibilities than migrated women, where 69.3 percent of the migrated man and 52.6 percent of the migrated women are employed. The ratio of male in labor force is 75.6 percent and female is 36.4 percent. The unemployment rate of migrated male population is 6.26 percent and female population is 5.28 percent for the period 1995-2000.

Table 3.12: Migrated Population between the Provinces by Economic Activity (1980-2000)

Years/ Periods	Total	Agriculture, forestry, hunting and fishing	Industry	Mining and quarrying	Manufacturing	Electricity gas and water	Services	Construction	Wholesale and retail trade, hotels and restaurants	Transportation communication and storage	Finance, insurance, real estate and business services	Community, social and personal services	Activities not adequately defined
Total Population of Turkey													
1985	20.556.786	12.118.533	2.345.719	137.126	2.185.369	23.224	6.092.534	750.546	1.382.636	615.888	389.254	2.847.289	106.921
1990	23.381.893	12.547.796	2.992.864	130.823	2.781.717	80.324	7.841.233	1.184.242	1.854.306	775.427	541.742	3.344.033	141.483
2000	25.997.141	12.576.827	3.470.360	96.035	3.276.173	98.152	9.949.954	1.196.246	2.512.777	853.255	808.126	4.545.535	34.015
The Percentage Shares of Total Population of Turkey													
1985	100,00	58,95	11,41	0,67	10,63	0,11	29,64	3,65	6,73	3,00	1,89	13,85	0,52
1990	100,00	53,66	12,80	0,56	11,90	0,34	33,54	5,06	7,93	3,32	2,32	14,30	0,61
2000	100,00	48,38	13,35	0,37	12,60	0.38	38,27	4,60	9,67	3,28	3,11	17,48	0.13
The Population Migrating between the Provinces													
1980-1985	1.290.951	240.141	222.009	14.046	205.095	2.868	828.801	120.101	122.68	54.684	53.667	466.075	11.594
1985-1990	1.803.547	311.043	322.318	14.142	299.843	8.333	1.170.186	212.982	195.126	76.984	74.457	584.338	26.299
1995-2000	2.242.616	408.426	316.681	9.375	298.293	9.013	1.517.509	173.214	216.996	61.859	92.325	970.74	2.375
The Percentage Shares of the Population Migrating between the Provinces													
1980-1985	100,00	18,60	17,20	1,09	15.89	0.22	64,20	9,30	9,50	4.24	4,16	36,10	0,90
1985-1990	100,00	17,25	17,87	0,78	16,63	0.46	64,88	11,81	10,82	4.27	4.13	32,40	1,46
1995 2000	100,00	18,21	14,12	0,42	13,30	0.4	67,67	7,72	9,68	2,76	4.12	43,29	0.11

Source: Kocaman (2008).

According to the Table 3.12, between the years 1980 to 2000 the vast majority of migrated population is working in the services sector. It is followed by the agriculture for the periods 1980-1985 and 1995-2000. But for the period 1985-1990, the second highest sector is the industry sector with the ratio of 17.87 percent.

Table 3.13: Percentage Shares of Migrated Population by Economic Activity (1995-2000)

	Total	Agriculture, hunting, forestry and hunting	Industry	Mining and quarrying	Manufacturing industry	Electricity, gas and water	Services	Construction	Wholesale and retail trade, restaurants and hotels	Transport, communication and storage	Finance, insurance, real estate and business services	Community, social and personal services	Activities not adequately defined
Total													
Total	100,00	24,15	14,79	0,45	13,90	0,44	61,06	7,18	9,89	2,97	3,91	37,00	0,10
Male	100,00	13,18	16,52	0.6	15,36	0,56	70,30	9,85	11,69	3.72	3.78	41,14	0.12
Female	100,00	52,61	10,29	0,04	10,13	0,12	37,10	0.28	5,22	1.03	4,23	26.28	0.05
From city to city													
Total	100,00	3,07	15,97	0,33	15,11	0,53	80,96	6,91	12,06	3.68	5,91	52,25	0.14
Male	100,00	2,35	16,07	0,40	15,07	0,60	81,58	8.55	12,71	4,07	5,07	51,04	0,15
Female	100,00	5,91	15,59	0,07	15,28	0,24	78,50	0,48	9,52	2.15	9,21	57,03	0.09
From village to city													
Total	100,00	10,53	24,93	0,68	23,78	0,47	64,54	12,24	12,24	3,78	2,31	33.85	0,13
Male	100,00	6,86	23,75	0,78	22,44	0,52	69,40	14,42	13,01	4.31	2.12	35,41	0,13
Female	100,00	30,40	31,32	0,08	31,07	0,16	38,29	0.44	8,08	0,92	3,29	25,42	0.14
From city to village													
Total	100,00	55,73	9,56	0,43	8,79	0,34	34,71	5,31	6,79	1,92	2,15	18,49	0,05
Male	100,00	36,03	13,45	0,72	12,17	0,55	50,53	8,99	9,89	3,01	2,63	25,92	0,08
Female	100,00	83,36	4,12	0,02	4,05	0,05	12,52	0,13	2,45	0,39	1.47	8,06	0,02
From village to village													
Total	100,00	62,81	9,07	0,87	7,98	0,21	28,13	7,11	3,49	0,93	0,61	15,95	0,03
Male	100,00	38,46	13,40	1,61	11,41	0,38	48,14	13,01	5,67	1,62	0,92	26,89	0,04
Female	100,00	91,81	3,91	0,00	3,90	0,01	4,28	0,09	0,89	0,12	0,25	2,92	0,01

Source: Kocaman, 2008, [TURKSTAT, 2005].

In the 1995-2000 period, when we look at the migrated female, we see that the vast majority is working in the agriculture. According to Table 3.13, 52.6 percent of the migrated population is agricultural female worker and 13.18 percent is agricultural male worker. Most of the migrated male is working in services sector with the percentage of 70.3 percent. When the population migrated from villages to cities is considered, it is seen that, both male and female migrants are mostly included in services sector. Percentage of male working in services sector is 69.4 percent and the same ratio for the female is 38.3 percent.

When Table 3.14 is considered, we see that vast majority is regular or casual employees between the years 1980-2000. According to the Table 3.15, when the employment status of the migrated population is considered, during the 1995-2000

period, 72.33 percent of the migrated population is regular or casual employees, where the majority of it is male, and 1.86 percent of migrated population is employer. The share of self employed is 9.27 percent and 16.53 percent of the total migrated are unpaid family workers in the same period. A great majority of the unpaid family workers are female workers with the ratio of 44.9 percent, where the same ratio for male workers is 5.6 percent.

Table 3.14: Migrated Population by Employment Status (1980-2000)

Years / Periods	Total	Employment Status				
		Regular or Casual employee	Employer	Own account worker	Unpaid family worker	Unknown
Total Population of Turkey						
1985	20.556.786	6.978.181	192.948	4.662.181	8.721.860	1.616
1990	23.381.893	8.990.727	313.175	5.204.162	8.871.277	2.552
2000	25.997.141	11.314.030	677.316	5.228.491	8.775.012	2.292
The Percentage Shares of Total Population of Turkey						
1985	100,00	33,95	0,94	22,68	42,43	0,01
1990	100,00	38,45	1,34	22,26	37,94	0,01
2000	100,00	43,52	2,61	20,11	33,75	0,01
The Population Migrating between the Provinces						
1980-1985	1.290.951	973 719	15 309	167 773	133 960	190
1985-1990	1.803.547	1 373 949	26 793	216 605	185 842	358
1995-2000	2.242.616	1 774 890	33 543	163 716	270 232	235
The Percentage Shares of the Population Migrating between the Provinces						
1980-1985	100,00	75,43	1,19	13,00	10,38	0,01
1985-1990	100,00	76,18	1,49	12,01	10,30	0,02
1995-2000	100,00	79,14	1,50	7,30	12,05	0,01

Source: Kocaman, 2008, [TURKSTAT, 2005].

Table 3.15: Percentage of Migrated Population by Employment Status (1995-2000) - (Age 12 and above)

	Total	Employment status of migrated population				
		Regular or casual employee	Employer	Self employed	Unpaid family worker	Unknown
Total						
Total	100,00	72.33	1,86	9,27	16,53	0,01
Male	100,00	80,93	2,22	11,27	5,57	0.01
Female	100,00	50.01	0.92	4,11	44.95	0
From city to city						
Total	100,00	90,35	2,07	5.06	2,50	0.01
Male	100,00	89,79	2,31	6,00	1,88	0,02
Female	100,00	92,58	1,11	1,35	4.96	0,01
From village to city						
Total	100,00	85,20	1,27	6,95	6,57	0,00
Male	100,00	87,05	1,41	7,95	3,60	0
Female	100,00	75,23	0,55	1,55	22.67	0
From city to village						
Total	100,00	42,76	2,10	17,06	38,08	0,00
Male	100,00	59,23	2,93	24,40	13,44	0,01
Female	100,00	19,67	0,93	6,77	72.63	0
From village to village						
Total	100,00	47,42	0,59	10,22	41.77	0
Male	100,00	70,70	0,59	15,38	13,32	0,00
Female	100,00	19,69	0,58	4,07	75,65	0

Source: Kocaman, 2008, [TURKSTAT, 2005].

Most of the migrants migrated from villages to cities are regular or casual employees, and male workers are higher than female workers in this employment status for the period 1995-2000. These statistics are given in Table 3.15.

Table 3.16: Migrated Population between Provinces by Literacy and Educational Level (1980-2000)

Years / Periods	General Total	Illiterate	Literate												Unknown - Literacy
			Total Literate	Not Graduated From a School	Educational Level									Unknown - Graduation	
					Total	Primary School	Primary Education	Junior-High School	Vocational school at Junior High School	High School	Vocational school at High School Level	Higher Education	Unknown - Institution		
Total Population of Turkey															
1985	43.112.337	9.703.662	33.321.762	7.929.774	25.365.982	18.775.003		2.788.230	13.128	1.926.648	908.001	952.634	2.338	26.006	86.913
1990	49.163.110	9.587.981	39.555.483	7.817.536	31.720.315	22.681.303		3.697.536	17.448	2.805.852	1.012.297	1.497.345	8.534	17.632	19.646
2000	59.859.243	7.589.657	52.259181	12.886.331	39.359.807	22.166.827	1.719.479	4.161.798	146.232	6.096.662	1.916 845	3 151.964	.	13.243	10.205
The Percentage Shares of Total Population of Turkey															
1985	100,00	22,51	77,29	18,39	58,84	43,55	0,00	6,47	0,03	4,47	2,11	2,21	0,01	0,06	0,20
1990	100,00	19,50	80,46	15,90	64,52	46,13	0,00	7,52	0,04	5,71	2,06	3,05	0,02	0,04	0,04
2000	100,00	12,68	87,30	21,53	65,75	37,03	2,87	6,95	0,24	10,18	3,20	5,27		0,02	0,02
The Population Migrating between the Provinces															
1980-1985	2.810.265	349.821	2.456.427	122.585	2.331.906	1.316.042		288.554	1.478	298.011	181.01	246.502	309	1.936	4.017
1985-1990	3.971179	467.96	3.503.213	505.712	2.996.604	1.682.326		369.43	1.656	420.406	181.124	340.753	909	897	206
1995-2000	4.710.354	305.525	4.404.515	684.344	3.719.760	1.428.320	111.836	355.831	10.841	919.615	283.744	609.573		411	314
The Percentage Shares of the Population Migrating between the Provinces															
1980-1985	100,00	12,45	87,41	4,36	82,98	46,83	0,00	10,27	0,05	10,60	6,44	8,77	0,01	0,07	0,14
1985-1990	100,00	11,78	88,21	12,73	75,45	42,36	0,00	9,30	0,04	10,59	4,56	8,58	0,02	0,02	0,01
1995-2000	100,00	6,49	93,51	14,53	78,97	30,32	2,37	7,55	0,23	19,52	6,02	12,94		0,01	0,01

Source: Kocaman, (2008).

Table 3.16 gives us the migrated population by literacy and educational level between the years 1980 and 2000. According to the table, 23 percent of the total migrated population was illiterate in the year 1985. This ratio decreased to 19.5 percent in 1990 and 13 percent in 2000. On the other hand, the shares of literate migrants are increasing. For instance it was 77 percent in 1985 and increased to 80 percent in 1990 and 87 percent in 2000.

According to the data obtained from TURKSTAT (2005), in the 1995-2000 period, 96.6 percent of migrated males and 88.4 percent of migrated females were literate. In the same period, Turkey's labor force participation rate (LFPR) of migrated population was 55.2 percent (Kocaman, 2008).

When we consider the occupation of the migrated population, we see that between the years 1980 and 2000, non-agricultural production and related workers, transport, equipment operators and laborers have the largest shares. For the period 1980-1985,

it is 37.4 percent, for the period 1985-1990, it is 39 percent and for the period 1995-2000 it is 34.7 percent. Those data can be seen from Table 3.17. The least share of occupation of migrated population for the same period is constituted by administrative, executive and managerial workers.

Table 3.17: Migrated Population between the Provinces by Occupation (1980-2000)

Year / Period	Total	Scientific, technical, professional and related workers	Administrative, executive and managerial workers	Clerical and related workers	Sales workers	Service workers	Agricultural, animal husbandry and forestry workers, fishermen and hunters	Non-agricultural production and related workers, transport, equipment operators and labourers	Workers not classifiable by occupation
Total Population of Turkey									
1985	20.556.786	1.011.705	168.07	732.081	977.564	1.111.118	12.069.803	4.479.538	6.907
1990	23.381.893	1 281.899	235.641	958.629	1 310.089	1.430 191	12 528.080	5.631.671	5 693
2000	25.997.141	1.901.739	366.346	1.543.499	1 603.313	1.939.402	12.593.050	6033.486	16.306
The Percentage Shares of Total Population of Turkey									
1985	100,00	.4.92	0,82	3,56	4,76	5,41	58,71	21.79	0.03
1990	100,00	5.48	1.01	4,10	5,60	6,12	53.58	24.09	0.02
2000	100,00	7,32	1,41	5,94	6,17	7.46	48.44	23.21	0.06
The Population Migrating between the Provinces									
1980-1985	1.290.951	233.766	22.658	88.671	77 316	149.837	235.287	482794	622
1985-1990	1.803.547	287 366	32.006	122.464	128.99	218.884	308.155	705 087	595
1995-2000	2.242.616	375.341	33.81	185.564	114.805	341.987	409 801	779.936	1.372
The Percentage Shares of the Population Migrating between the Provinces									
1980-1985	100,00	18.11	1.76	6,87	5,99	11,61	18.23	37.4	0.05
1985-1990	100,00	15,93	1,77	6,79	7,15	12,14	17,09	39.09	0.03
1995-2000	100	16,74	1,51	8,27	5,12	15,25	18.27	34.78	0.U6

Source: Kocaman, (2008).

3.2. Labor Market in Turkey

3.2.1. Main Characteristics of Labor Market in Turkey

Based on Tansel (1998) and Şenses's (2000) studies, Başak (2005) stressed that the main characteristics of the Turkish labor market are strong supply sides pressures due to rapid population growth, large wage segmentation along various lines, high rates of unemployment, pressures which are mitigated by declining participation rates.

As mentioned before, there is a serious level of migration from the rural agricultural areas to the urban industrial areas in Turkey. The shift from the agriculture sector to the industry and the service sector is increasing every year. It can be seen from Table 3.18 that, in the year 1980, employment ratio in agriculture sector was 58 percent, industry sector was 12 percent and it was 24.8 percent in service sector. In the year 1990, those ratios were changed as, 52 percent in agriculture sector, 13 percent in industry sector and 29 percent in the service sector.

Table 3.18: Share in Total Population, Employed Population by Economic Activity (Population 15 years of age and over-%)

		AGRICULTURE	INDUSTRY			CONSTRUCTION	SERVICES				
Census year		Agriculture, hunting, forestry, fishing	Mining and quarrying	Manufac-turing	Electricity, gas and water	Construction	Wholesale and retail trade, restaurants and hotels	Transport communi-cation and storage	Finance, insurance, real estate and business services	Community, social and personal services	Activities not adequately defined
1955	100.0	77.4	0.5	6.0	0.1	1.6	2.5	1.6	0.3	4.1	6.0
1960	100.0	74.9	0.6	6.8	0.1	2.2	2.7	1.9	0.4	5.2	5.1
1965	100.0	71.9	0.6	7.1	0.2	2.6	2.5	2.1	0.4	6.2	6.4
1970	100.0	66.1	0.8	8.8	0.1	3.1	4.7	2.5	1.0	10.9	2.0
1975	100.0	65.2	0.7	8.7	0.1	3.3	4.9	3.0	1.4	11.4	1.4
1980	100.0	57.9	0.8	11.0	0.2	4.4	6.2	3.1	1.7	13.8	1.0
1985	100.0	57.0	0.7	10.9	0.1	3.9	7.1	3.2	2.0	14.6	0.5
1990	100.0	52.1	0.6	12.0	0.4	5.3	8.2	3.5	2.4	14.9	0.6
2000	100.0	47.8	0.4	12.6	0.4	4.7	9.8	3.3	3.2	17.7	0.1

Source: TUKSTAT, 2006

Notes: Does not cover unemployed persons 1990 and 2000.

As a result of this transition from agriculture to industry sector, the service sector and the manufacturing sectors ratio are increasing; however the job creating capacity in industry is limited.

Table 3.19: Developments in Domestic Labor Markets (15+ Age Group, Thousand)

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Population 15 Years Old and Over	33,746	34,315	35,601	36,869	37,984	38,96	40,038	41,175	42,243	43,299	44,3	45,31	46,211
Labour Force	19,391	19,93	20,15	21,01	21,264	20,31	21,877	22,286	22,697	22,755	23,39	23,88	23,078
Labour Force Participation Rate(%)	57.5	58.1	56.6	57.0	56.0	52.1	54.6	54.1	53.7	52.6	52.8	52.7	49.9
Women (%)	34.3	36.2	34.2	34.1	32.7	26.8	31.3	30.9	30.6	28.8	29.3	30	26.6
Men (%)	81.2	80.6	79.7	80.3	79.7	78.1	78.5	77.8	77.3	76.8	76.7	75.8	73.7
Employment	17,755	18,222	18,539	19,288	19,459	18,5	20,006	20,586	21,194	21,204	21,78	22,05	21,581
Employment Rate (%)	52.6	53.1	52.1	52.3	51.2	47.5	50.0	50.0	50.2	49.0	49.2	48.7	46.7
Rural (%)	63.7	69.6	63.6	66.3	64.0	57.4	62.2	62.6	63.7	60.9	62.3	61.5	56.4
Urban (%)	42.0	41.3	41.5	40.4	40.9	39.5	40.5	40.3	40.1	40.3	40.0	39.8	40.2
Unemployed	1,638	1,709	1,612	1,723	1,805	1,815	1,871	1,7	1,503	1,552	1,607	1,83	1,497
Unemployment Rate (%)	8.4	8.6	8.0	8.2	8.5	8.9	8.6	7.6	6.6	6.8	6.9	7.7	6.5
Rural (%)	5.0	5.3	4.9	4.8	5.0	5.5	5.1	4.9	3.7	3.8	3.3	3.9	3.9
Urban (%)	13.1	13.1	12.1	12.7	12.6	12.7	12.4	10.8	9.9	10.0	10.5	11.4	8.8
Young Unemployment Rate (%)	17.5	15.8	16.0	15.4	16.3	17.7	16.1	15.6	13.5	14.3	14.2	15.0	13.1
Under Employment Rate(%)	6.6	7.0	6.5	7.2	8.2	7.7	8.5	7.0	6.8	6.1	6.2	9.1	6.9

Source: TURKSTAT, Household Labour Force Surveys, website.
Notes: (1) The results before 2003 revised according to results of 2000 Census of [Population 15 years of age and over] percent
(2)Total numbers may not be correct due to rounding of the numbers.

Developments in domestic labor markets over the age 15 are given in the Table 3.19. According to the Table 3.19, employment rate in rural areas is higher than the employment rate in urban areas. A decreasing trend in employment rate is observed in both rural and urban areas between the years 1988 and 2000. For example in 1988, employment rate in rural area was 63.7 percent and it was 42 percent in urban areas. It decreased to 56.4 percent in rural areas and 40.2 percent in urban areas in the year 2000. For the year 2000, the employment rate in rural areas was 56 percent and it was 40 percent in the urban areas. The share of females in total employment declined from 34.3 percent to 27 percent, while the shares of male decreased from 81.2 percent to 73 percent during the same period.

Table 3.20: Population, Employment, Unemployment, Labor Force, Participation in Turkey (1980-1988)

YEARS		1980	1981	1982	1983	1984	1985	1986	1987	1988
Total Population		44736957	45543002	46687451	47862646	49069445	50664458	51799489	52935527	54097750
Non-Instltutlonal	12+	2978449S	30417324	31317921	32245183	33199898	34465511	35237638	36010451	36801079
Civilian Population	15+	26960010	27540382	28366602	29217608	30094144	31256627	31956866	32657726	33374759
Labour Force	12+	17923971	17882705	18044205	18367137	18621932	18832407	19341592	19871040	20193418
	15+	17077691	17046759	17205234	17512671	17762576	17973014	18461901	18973665	19285109
Employed	12+	16437249	16577363	16748000	16915177	17170153	17455662	17771827	18172084	18445192
	15+	15702127	15839014	16005942	16169270	16419342	16699204	17009503	17401735	17667593
Unemployed	12+	1486722	1305342	1296205	1451960	1451779	1376745	1569765	1698956	1748226
	15+	1375564	1207745	1199292	1343401	1343234	1273810	1452398	1571930	1617516
Not In Labour Force	12+	11860527	12534619	13273716	13878046	14577966	15633104	15896046	16139411	16607661
	15+	9882319	10493623	11161368	11704937	12331568	13283613	13494965	13684061	14089650
Those Less than 12	12-	14197336	14354511	14575531	14799955	15027834	15325159	15637761	15950363	16262964
(15) Years of Age	15-	17433912	17652614	17960689	18274140	18593062	19010138	19236520	19462902	19689284
Labour Force	12+	60.2	58.8	57.6	57	56.1	54.6	54.9	55.2	54.9
Participatlon Rate(%)	15+	63.3	61.9	60.7	59.9	59	57.5	57.8	58.1	57.8
Unemployment Rate	12+	8.3	7.3	7.2	7.9	7.8	7.3	8.1	8.5	8.7
(%)	15+	8.1	7.1	7	7.7	7.6	7.1	7.9	8.3	8.4

Source: Bulutay, (1995)

During the 1980-1988 period, contrary to the employment rate, there is an increasing trend in unemployment rate. For instance, in 1980, unemployment rate in Turkey was 8.1 percent. It increased to 8.4 percent in the year 1988. The unemployment rate for the rural area was 5 percent and it was 13 percent for the urban areas in 1988. This can be seen from the Tables 3.19 and 3.20.

Table 3.21: Employed Population by Economic Activity, 1980-2000

Census year	Total employed	Agriculture		Industry		Construction		Services		Activities not adequately defined	
		Number	%	Number	%	Number	%	Number	%	Number	%
Total											
1980	18 522 322	11 104 501	60	2 140 887	11.6	765 072	4.1	4 335 230	23.4	176 632	1
1985	20 556 786	12 118 533	59	2 345 719	11.4	750 546	3.7	5 235 067	25.5	106 921	0.5
1990	23 381 893	12 547 796	53.7	2 992 864	12.8	1 184 242	5.1	6 515 508	27.9	141 483	0.6
2000	25 997 141	12 576 827	48.4	3 470 360	13.3	1 196 246	4.6	8 719 693	33.5	34 015	0.1
Male											
1980	11 708 813	5 155 542	44	1 834 203	15.7	760 372	6.5	3 824 327	32.7	134 369	1.1
1985	13 064 053	5 634 276	43.1	2 010 579	15.4	743 849	5.7	4 581 936	35.1	93 413	0.7
1990	14 973 479	5 647 330	37.7	2 425 232	16.2	1 173 524	7.8	5 606 307	37.4	121 086	0.8
2000	16 567 405	5 443 771	32.9	2835 100	17.1	1 176 827	7.1	7 083 430	42.8	28 277	0.2
Female											
1980	6 813 509	5 948 959	87.3	306 684	4.5	4 700	0.1	510 903	7.5	42 263	0.6
1985	7 492 733	6 484 257	86.5	335 140	4.5	6 697	0.1	653 131	8.7	13 508	0.2
1990	8 408 414	6 900 466	82.1	567 632	6.8	10 718	0.1	909 201	10.8	20 397	0.2
2000	9 429 736	7 133 056	75.6	635 260	6.7	19 419	0.2	1 636 263	17.4	5 738	0.1

Source: TURKSTAT, 2003.

Most of the working population in Turkey is employed in agriculture. As can be seen from Table 3.21, the share of the agriculture of employed population was 60 percent in 1980. However the share of agriculture in employed population is decreasing every year. In the year 2000, it is observed that the share of the agriculture has decreased to 48.4 percent. Besides, the shares of industry, construction and services have increased during this period.

The great majority of the employment in agriculture consists of the female workers. Their share was 75.6 percent in 2000 where the male workers share was 32.9 percent. But when we look at industry, services and construction sectors, male workers are in majority. However, female concentration in services increased remarkably, as their employment share in the service sectors increased from 7.5 percent in the year 1980 to 17.4 percent in 2000. This can be seen from the Table 3.21.

According to the Table 3.22, most of the female workers are working as unpaid family workers with the share of 74.8 percent in 1990. In the same year, the shares of male employers (2 percent) are higher than the female employers (0.2 percent), in the same way, male casual or regular employees and self employed male workers have higher percentages than female workers.

Table 3.22: Employed Population by Employment Status, 1980-2000

Census year	Total employed	Regular or Casual Employee		Employer		Self employed		Unpaid family worker		Unknown	
		Number	%	Number	%	Number	%	Number	%	Number	%
Total											
1980	**18 522 322**	**6 162 002**	**33.3**	**176 459**	**1**	**4 277 257**	**23.1**	**7 859 506**	**42.4**	**47 098**	**0.3**
1985	**20 556 786**	**6978 181**	**33.9**	**192 948**	**0.9**	**4 662 181**	**22.7**	**8 721 860**	**42.4**	**1 616**	**0**
1990	**23 381 893**	**8 990 727**	**38.5**	**313 175**	**1.3**	**5 204 162**	**22.3**	**8 871 277**	**37.9**	**2 552**	**0**
2000	**25 997 141**	**11 314 030**	**43.5**	**677 316**	**2.6**	**5 228 491**	**20.1**	**8 775 012**	**33.8**	**2 292**	**0**
Male											
1980	11 708 813	5 216 151	44.5	169 241	1.4	3 953 786	33.8	2 323 995	19.8	45 640	0.4
1985	13 064 053	5 905 700	45.2	182 198	1.4	4 311 114	33	2 663 495	20.4	1 546	0
1990	14 973 479	7 501 464	50.1	293 820	2	4 591 394	30.7	2 584 412	17.3	2 389	0
2000	16 567 405	9 024 700	54.5	592 563	3.6	4 664 344	28.2	2 283 709	13.8	2 089	0
Female											
1980	6 813 509	945 851	13.9	7 218	0.1	323 471	4.7	5 535 511	81.2	1 458	0
1985	7 492 733	1 072 481	14.3	10 750	0.1	351 067	4.7	6 058 365	80.9	70	0
1990	8 408 414	1 489 263	17.7	19 355	0.2	612 768	7.3	6 286 865	74.8	163	0
2000	9 429 736	2 289 330	24.3	84 753	0.9	564 147	6	6 491 303	68.8	203	0

Source: TURKSTAT, 2003.

Table 3.23 shows the population not in labor force by reason for not working by gender. The vast majority of the population not in labor force is composed of the female people. According to the table, in the year 1990, the most popular reason for not being in the labor force is being housewife (59 percent); it is followed by the students (27 percent) and retired people (8 percent).

Table 3.23: Population Not in Labor Force by Reason for Not Working, 1980-2000

Census year	Population not in labor force	Retired		Housewife		Student		Other (1)		Unkno	
		Number	%	Number	%	Number	%	Number	%	Number	%
Total											
1980	**11 194 199**	**581 158**	**5.2**	**6 950 968**	**62.1**	**2 654 580**	**23.7**	**904 064**	**8.1**	**103 429**	**0.9**
1985	**13 670 254**	**928 312**	**6.8**	**8 304 149**	**60.7**	**3 337 376**	**24.4**	**1 100 417**	**8**	**-**	**-**
1990	**16 030 516**	**1 297 536**	**8.1**	**9 500 480**	**59.3**	**4 294 759**	**26.8**	**937 741**	**5.8**	**-**	**-**
2000	**23 173 230**	**2 869 535**	**12.4**	**11 387 456**	**49.1**	**6 943 598**	**30**	**1 972 641**	**8.5**	**-**	**-**
Male											
1980	3 024 831	483 079	16			1 705165	56.4	734 992	**24.3**	**101 595**	**3.4**
1985	3 820 952	798 822	20.9			2 057 396	53.8	964 734	**25.2**		
1990	4 459 698	1 101 177	24.7			2 574 945	57.7	783 576	**17.6**		
2000	7 657 129	2216313	28.9			3 936 024	51.4	1 504792	**19.7**		
Female											
1980	8 169 368	98 079	1.2	6 950 968	85.1	949 415	11.6	169 072	**2.1**	**1 834**	**0**
1985	9 849 302	129 490	1.3	8 304 149	84.3	1 279 980	13	135683	**1.4**		
1990	11 570 818	196 359	1.7	9 500 480	82.1	1 719 814	14.9	154 165	**1.3**		
2000	15516101	653 222	4.2	11 387 456	73.4	3 007 574	19.4	467 849	**3**		

Source: TURKSTAT, 2003.

Note: Other includes "income recipients" and for 2000 Population Census, "Sought a job, without using any channel in the last three months".

Table 3.24: Unemployed Persons by Age Group

Year and sex	Age group											[15 age+] ' 000
	Total	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65 +
Total												
1988	1 637	521	466	206	121	85	51	65	49	43	22	8
1989	1 711	491	423	249	135	111	83	76	52	56	24	11
1990	1 611	458	427	253	140	101	65	57	52	32	21	8
1991	1 724	441	519	282	158	105	73	53	52	28	9	6
1992	1 805	423	583	285	184	119	78	53	36	32	9	4
1993	1 815	420	593	315	172	119	76	45	38	27	11	2
1994	1 871	431	562	320	181	124	95	72	49	25	10	6
1995	1 699	401	531	302	146	102	78	57	39	26	12	8
1996	1 503	321	499	271	136	99	63	55	31	18	8	5
1997	1 552	349	502	283	136	95	73	52	36	16	8	5
1998	1 607	321	506	297	146	110	86	66	41	21	10	6
1999	1 829	341	548	361	191	134	104	75	41	24	7	5
2000	1 498	247	458	277	163	128	88	56	46	19	13	3
2001	1 969	317	546	371	229	190	125	100	51	25	9	6
2002	2 466	339	641	479	307	244	191	133	74	42	11	5
2003	2 493	322	654	517	329	228	172	133	80	38	15	5
2004	2 498	288	656	558	341	234	171	121	79	30	14	6
Male												
1988	1 017	327	273	116	64	41	36	52	42	39	20	7
1989	1 116	310	253	154	77	69	64	62	45	51	21	10
1990	1 089	297	272	172	94	62	45	47	46	31	18	8
1991	1 271	320	367	206	107	82	59	42	49	26	9	6
1992	1 321	305	398	208	139	90	61	47	32	31	8	3
1993	1 324	287	423	235	118	91	66	37	33	25	11	2
1994	1 362	306	390	214	138	92	79	63	45	23	9	6
1995	1 230	288	362	218	101	78	62	47	33	26	11	7
1996	1 115	225	352	200	103	78	54	48	28	15	8	5
1997	1 064	223	318	192	97	70	61	46	34	13	7	5
1998	1 162	211	353	211	112	82	69	57	37	18	9	6
1999	1 312	218	371	262	140	102	85	64	39	23	7	4
2000	1 110	170	319	204	124	100	74	49	37	18	12	3
2001	1 486	216	382	279	177	154	104	90	47	23	9	5
2002	1 827	229	434	351	225	195	154	121	67	37	10	4
2003	1 830	218	438	380	241	176	141	113	71	35	13	4
2004	1 878	202	435	420	264	187	142	110	71	29	13	6
Female												
1988	620	194	193	90	57	44	15	13	7	4	2	1
1989	595	181	170	95	58	42	19	14	7	5	3	1
1990	522	161	156	81	46	39	20	10	6	2	3	-
1991	454	121	152	76	51	24	15	11	3	2	-	-
1992	485	118	185	77	46	30	17	7	4	1	1	1
1993	492	133	170	81	55	28	10	8	6	2	-	-
1994	509	125	173	106	44	32	16	9	4	2	1	-
1995	469	114	169	84	45	24	16	11	6	1	1	1
1996	388	96	147	71	33	21	9	7	3	3		-
1997	489	126	185	91	39	25	12	7	2	3	1	-
1998	445	110	153	86	35	28	17	9	4	3	1	-
1999	517	124	177	99	52	33	19	11	3	1		1
2000	388	77	139	73	39	28	14	7	9	1	1	-
2001	483	101	164	92	52	36	21	10	4	2		1
2003	639	110	207	128	82	49	37	12	7	5	1	1
2003	663	104	216	137	88	52	31	20	9	3		1
2004	620	86	222	138	77	47	29	12	8	2	1	-

Source: TURKSTAT, 2006.

Table 3.24 and Table 3.25 show the unemployed and employed population by age and educational status. According to these tables, the generality of the unemployed population is in 20-24 and 25-29 age groups, and the majority of the employed population is in 25-29, 30-34 and 35-39 in Turkey. According to Tunalı (2003), the youth faces a significantly higher risk of unemployment.

Table 3.25: Employed Persons by Educational Status (_000)

[15 age+]

Year and sex	Total	Illiterate		Literate											
		Totall Illiterate		Total literate	Literate without any diploma		Primary school		Vocational Junior high school		High school		Vocational high school		Universities and other higher educational	
		Number	%	Number	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
Total																
1988	17754	3112	17.53	14642	1597	10.91	9410	64.27	1164	7.95	1015	6.93	586	4.00	870	5.94
1989	18222	3036	16.66	15186	1596	10.51	9774	64.36	1297	8.54	1025	6.75	554	3.65	940	6.19
1990	18538	2851	15.38	15688	1416	9.03	10178	64.88	1376	8.77	1138	7.25	594	3.79	988	6.30
1991	19287	2834	14.69	16455	1307	7.94	10955	66.58	1387	8.43	1268	7.71	539	3.28	1000	6.08
1992	19460	2526	12.98	16933	1263	7.46	10987	64.89	1506	8.89	1481	8.75	620	3.66	1078	6.37
1993	18501	1854	10.02	16648	1108	6.66	10686	64.19	1502	9.02	1673	10.05	547	3.29	1133	6.81
1994	20007	2147	10.73	17859	1159	6.49	11478	64.27	1591	8.91	1803	10.10	590	3.30	1239	6.94
1995	20586	2092	10.16	18494	1050	5.68	11424	61.77	1909	10.32	2067	11.18	722	3.90	1323	7.15
1996	21195	2125	10.03	19070	903	4.74	11803	61.89	1919	10.06	2161	11.33	837	4.39	1448	7.59
1997	21203	1957	9.23	19246	728	3.78	11860	61.62	2008	10.43	2103	10.93	970	5.04	1579	8.20
1998	21778	1925	8.84	19854	702	3.54	11973	60.31	2206	11.11	2405	12.11	936	4.71	1633	8.23
1999	22048	1961	8.89	20088	764	3.80	11936	59.42	2274	11.32	2335	11.62	1017	5.06	1764	8.78
2000	21581	1917	8.88	19664	708	3.60	11384	57.89	2112	10.74	2333	11.86	1233	6.27	1894	9.63
2001	21524	1899	8.82	19625	748	3.81	11201	57.08	2126	10.83	2185	11.13	1415	7.21	1950	9.94
2002	21355	1649	7.72	19706	678	3.44	10794	54.78	2300	11.67	2186	11.09	1609	8.17	2139	10.85
2003	21148	1493	7.06	19655	608	3.09	10327	52.54	2417	12.30	2234	11.37	1736	8.83	2333	11.87
2004	21791	1480	6.79	20311	830	4.09	10495	51.67	2631	12.95	2499	12.30	1615	7.95	2241	11.03
2005	22046	1265	5.74	20782	972	4.68	9809	47.20	2960	14.24	2507	12.06	1994	9.59	2540	12.22
Male																
1988	12520	1305	10.42	12242	1158	9.46	7145	58.36	1027	8.39	762	6.22	467	3.81	656	5.36
1989	12549	1134	9.04	12526	1104	8.81	7276	58.09	1111	8.87	781	6.24	451	3.60	692	5.52
1990	12901	1045	8.10	13054	981	7.51	7627	58.43	1198	9.18	861	6.60	462	3.54	729	5.58
1991	13395	995	7.43	13607	876	6.44	8174	60.07	1207	8.87	993	7.30	430	3.16	721	5.30
1992	13681	910	6.65	14086	805	5.71	8275	58.75	1315	9.34	1139	8.09	485	3.44	753	5.35
1993	13724	754	5.49	14308	761	5.32	8310	58.08	1338	9.35	1307	9.13	432	3.02	822	5.75
1994	14191	761	5.36	14809	762	5.15	8513	57.49	1379	9.31	1424	9.62	489	3.30	866	5.85
1995	14628	732	5.00	15578	696	4.47	8397	53.90	1682	10.80	1618	10.39	582	3.74	923	5.93
1996	15067	752	4.99	16018	606	3.78	8623	53.83	1703	10.63	1696	10.59	673	4.20	1015	6.34
1997	15399	744	4.83	16437	532	3.24	8849	53.84	1782	10.84	1631	9.92	780	4.75	1083	6.59
1998	15687	687	4.38	16941	505	2.98	8836	52.16	1941	11.46	1875	11.07	738	4.36	1106	6.53
1999	15713	630	4.01	17071	495	2.90	8779	51.43	1988	11.65	1814	10.63	816	4.78	1192	6.98
2000	15780	670	4.25	16978	476	2.80	8697	51.23	1868	11.00	1834	10.80	972	5.73	1263	7.44
2001	15555	634	4.08	16816	488	2.90	8335	49.57	1895	11.27	1747	10.39	1147	6.82	1309	7.78
2002	15232	490	3.22	16734	425	2.54	7849	46.90	1992	11.90	1730	10.34	1311	7.83	1435	8.58
2003	15257	451	2.96	16863	373	2.21	7600	45.07	2057	12.20	1783	10.57	1419	8.41	1574	9.33
2004	16023	504	3.15	15521	551	3.55	7860	50.64	2233	14.39	2021	13.02	1320	8.50	1536	9.90
2005	16346	398	2.43	15948	603	3.78	7452	46.73	2507	15.72	2011	12.61	1650	10.35	1725	10.82
Female																
1988	5234	1807	34.52	3564	439	12.32	2265	63.55	137	3.84	253	7.10	119	3.34	214	6.00
1989	5673	1902	33.53	3957	492	12.43	2498	63.13	186	4.70	244	6.17	103	2.60	248	6.27
1990	5638	1806	32.03	4011	435	10.85	2551	63.60	179	4.46	277	6.91	132	3.29	259	6.46
1991	5894	1839	31.20	4235	432	10.20	2781	65.67	180	4.25	275	6.49	110	2.60	279	6.59
1992	5778	1616	27.97	4353	458	10.52	2712	62.30	191	4.39	342	7.86	135	3.10	325	7.47
1993	4778	1100	23.02	3841	347	9.03	2376	61.86	164	4.27	366	9.53	115	2.99	311	8.10
1994	5815	1386	23.83	4642	398	8.57	2966	63.89	213	4.59	379	8.16	101	2.18	374	8.06
1995	5958	1360	22.83	4825	354	7.34	3027	62.74	228	4.73	449	9.31	140	2.90	401	8.31
1996	6128	1373	22.41	4971	297	5.97	3180	63.97	216	4.35	465	9.35	164	3.30	433	8.71
1997	5805	1214	20.91	4817	196	4.07	3011	62.51	226	4.69	472	9.80	190	3.94	497	10.32
1998	6092	1238	20.32	5119	198	3.87	3137	61.28	265	5.18	530	10.35	198	3.87	528	10.31
1999	6337	1331	21.00	5291	269	5.08	3158	59.69	286	5.41	521	9.85	201	3.80	572	10.81
2000	5801	1247	21.50	4554	231	5.07	2687	59.00	245	5.38	498	10.94	261	5.73	632	13.88
2001	5969	1266	21.21	4936	260	5.27	2866	58.06	231	4.68	438	8.87	268	5.43	642	13.01
2002	6123	1159	18.93	5272	253	4.80	2945	55.86	308	5.84	456	8.65	298	5.65	704	13.35
2003	5891	1042	17.69	5209	235	4.51	2727	52.35	360	6.91	451	8.66	317	6.09	759	14.57
2004	5768	976	16.92	4791	280	5.84	2635	55.00	399	8.33	478	9.98	294	6.14	705	14.72
2005	5701	867	15.21	4834	369	7.63	2357	48.76	453	9.37	496	10.26	344	7.12	815	16.86

Source: TURKSTAT, 2006.

Tunalı (2003) has found that there is a presence of positive correlation between labor force participation and educational attainment. In his study, he compares the late 80's and the late 90's of Turkey's labor market and found that, in ten years the share in the labor force of those with less than basic education decreased, but the share of those with more education expanded.

According to the tables 3.25 and 3.26, the unemployed graduates have a higher share of high school and middle school when compared to the employed graduates. For instance in the year 1990, the rate of employed graduates of high schools is 7.2 percent, the same ratio for the graduates of vocational junior high is 3.7 percent. When unemployed literate population is considered, the ratios are as follows; ratio for the unemployed graduates of vocational junior high is 5.7 percent and for the graduates of high schools is 17 percent. Furthermore, for the same year, the share of employed graduates of universities and other higher educational institutions in total employed literate is 6.3 percent which is higher than the unemployed graduates (5 percent). For the years 1988-2005, the average rate of employed university graduates (8.3 percent) is again higher than the rate of unemployed university graduates (7.9 percent).

During the period 1988-2005, the average rate of total illiterate (10.5 percent) in total employed population is higher than the rate of total illiterate unemployed (4.21 percent) in total unemployed population. When the share of employed illiterate female population (23.6 percent) is considered, it is seen from the Table 3.27 that, it is significantly higher than the illiterate male population (5.3 percent). However, between the employed graduates of universities and other higher educational institutions, female has a higher share with the ratio of 10.2 percent, where male has the ratio of 6.9 percent.

Within the same period, the share of unemployed male (51.7 percent) primary school graduates is higher than the female (33.5 percent). But when university graduates are taken into consideration, it is seen that the female unemployed population (13.8

percent) has a bigger share than male population (5.9 percent). This can be seen from the Table 3.26.

Table 3.26: Unemployed Persons by Educational Status (_000)

[15 age+] **' 000**

Year and sex	Total	Illiterate		Literate													
		Totall Illiterate		Total literate	Literate without any diploma		Primary school		Vocational Junior high school		High school		Vocational high school		Universities and other higher educational	
		Number	%	Number	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
Total 1988	1639	121	7.38	1518	88	5.80	769	50.66	221	14.56	267	17.59	86	5.67	87	5.73
1989	1708	161	9.43	1547	105	6.79	861	55.66	177	11.44	251	16.22	86	5.56	67	4.33
1990	1611	132	8.19	1479	72	4.87	804	54.36	192	12.98	254	17.17	85	5.75	73	4.94
1991	1722	90	5.23	1632	64	3.92	912	55.88	216	13.24	258	15.81	100	6.13	83	5.09
1992	1805	77	4.27	1728	77	4.46	923	53.41	209	12.09	316	18.29	104	6.02	99	5.73
1993	1815	64	3.53	1752	66	3.77	937	53.48	219	12.50	347	19.81	81	4.62	102	5.82
1994	1870	71	3.80	1799	75	4.17	912	50.69	239	13.29	365	20.29	105	5.84	104	5.78
1995	1699	61	3.59	1639	46	2.81	794	48.44	236	14.40	350	21.35	125	7.63	90	5.49
1996	1504	46	3.06	1458	31	2.13	654	44.86	188	12.89	353	24.21	129	8.85	103	7.06
1997	1552	33	2.13	1520	25	1.64	620	40.79	224	14.74	373	24.54	164	10.79	115	7.57
1998	1606	43	2.68	1563	35	2.24	626	40.05	212	13.56	401	25.66	140	8.96	151	9.66
1999	1829	45	2.46	1784	34	1.91	791	44.34	241	13.51	409	22.93	157	8.80	155	8.69
2000	1497	68	4.54	1429	42	2.94	628	43.95	191	13.37	273	19.10	151	10.57	144	10.08
2001	1967	60	3.05	1907	46	2.41	891	46.72	256	13.42	336	17.62	214	11.22	164	8.60
2002	2464	79	3.21	2385	44	1.84	1091	45.74	329	13.79	374	15.68	280	11.74	267	11.19
2003	2493	113	4.53	2380	64	2.69	1113	46.76	331	13.91	339	14.24	243	10.21	290	12.18
2004	2498	57	2.28	2441	59	2.42	972	39.82	364	14.91	427	17.49	303	12.41	316	12.95
2005	2520	60	2.38	2460	98	3.98	955	38.82	412	16.75	402	16.34	306	12.44	287	11.67
Male																7.92
1988	1018	60	5.89	1109	59	5.32	525	47.34	151	13.62	129	11.63	53	4.78	41	3.70
1989	1116	91	8.15	1142	66	5.78	617	54.03	117	10.25	128	11.21	57	4.99	40	3.50
1990	1088	76	6.99	1012	52	5.14	604	59.68	141	13.93	124	12.25	51	5.04	42	4.15
1991	1270	55	4.33	1215	54	4.44	735	60.49	168	13.83	146	12.02	65	5.35	48	3.95
1992	1321	49	3.71	1272	57	4.48	735	57.78	164	12.89	193	15.17	70	5.50	55	4.32
1993	1324	46	3.47	1278	49	3.83	751	58.76	170	13.30	198	15.49	52	4.07	59	4.62
1994	1361	52	3.82	1309	55	4.20	727	55.54	184	14.06	217	16.58	72	5.50	56	4.28
1995	1230	38	3.09	1192	39	3.27	625	52.43	183	15.35	208	17.45	83	6.96	55	4.61
1996	1116	30	2.69	1087	26	2.39	549	50.51	151	13.89	216	19.87	85	7.82	62	5.70
1997	1065	23	2.16	1043	20	1.92	498	47.75	167	16.01	209	20.04	88	8.44	62	5.94
1998	1162	24	2.07	1138	30	2.64	519	45.61	168	14.76	249	21.88	86	7.56	87	7.64
1999	1312	33	2.52	1279	27	2.11	633	49.49	175	13.68	257	20.09	101	7.90	86	6.72
2000	1111	40	3.60	1071	32	2.99	527	49.21	157	14.66	174	16.25	101	9.43	80	7.47
2001	1484	45	3.03	1439	39	2.71	736	51.15	199	13.83	227	15.77	144	10.01	94	6.53
2002	1826	48	2.63	1778	36	2.02	917	51.57	264	14.85	229	12.88	187	10.52	145	8.16
2003	1831	58	3.17	1773	48	2.71	916	51.66	272	15.34	224	12.63	160	9.02	153	8.63
2004	1878	44	2.34	1834	52	2.84	827	45.09	300	16.36	284	15.49	199	10.85	172	9.38
2005	1867	42	2.25	1825	83	4.55	796	43.62	342	18.74	251	13.75	201	11.01	152	8.33
Female																
1988	621	61	9.82	630	29	4.60	244	38.73	70	11.11	138	21.90	33	5.24	46	7.30
1989	592	70	11.82	582	39	6.70	244	41.92	60	10.31	123	21.13	29	4.98	27	4.64
1990	523	56	10.71	467	21	4.50	201	43.04	51	10.92	130	27.84	35	7.49	31	6.64
1991	452	35	7.74	417	11	2.64	177	42.45	48	11.51	112	26.86	35	8.39	36	8.63
1992	484	28	5.79	456	21	4.61	188	41.23	46	10.09	124	27.19	35	7.68	44	9.65
1993	492	18	3.66	474	18	3.80	186	39.24	49	10.34	149	31.43	29	6.12	43	9.07
1994	510	20	3.92	490	21	4.29	185	37.76	56	11.43	148	30.20	33	6.73	48	9.80
1995	470	23	4.89	447	7	1.57	169	37.81	53	11.86	142	31.77	43	9.62	35	7.83
1996	388	17	4.38	371	6	1.62	106	28.57	37	9.97	138	37.20	44	11.86	42	11.32
1997	487	10	2.05	477	6	1.26	122	25.58	58	12.16	164	34.38	76	15.93	53	11.11
1998	445	19	4.27	426	5	1.17	107	25.12	45	10.56	152	35.68	54	12.68	64	15.02
1999	517	12	2.32	506	7	1.38	158	31.23	66	13.04	152	30.04	56	11.07	69	13.64
2000	387	28	7.24	357	10	2.80	100	28.01	34	9.52	99	27.73	50	14.01	64	17.93
2001	483	15	3.11	468	7	1.50	155	33.12	55	11.75	110	23.50	70	14.96	71	15.17
2002	637	31	4.87	606	8	1.32	174	28.71	65	10.73	144	23.76	93	15.35	122	20.13
2003	663	55	8.30	608	16	2.63	197	32.40	60	9.87	115	18.91	83	13.65	137	22.53
2004	620	13	2.10	606	7	1.16	145	23.93	64	10.56	142	23.43	104	17.16	144	23.76
2005	653	18	2.76	635	15	2.36	159	25.04	70	11.02	151	23.78	105	16.54	135	21.26

Source: TURKSTAT, 2006.

3.2.2. Unemployment in Turkey

Unemployment is one of the most serious problems that Turkey faces. The increase of unemployment reduces personal and social income; worsens the inequality of income distribution and poverty, causes production losses since labor force can't be fully utilized. In addition to economic problems unemployment causes sociological and psychological problems too.

Başol (1995) (cited in Tatar, 2006) gave the main reasons of unemployment in Turkey as follow:

- Annually increasing rates of population growth and supply of employment,
- Closing down of many institutes and laying off their employees because of the inflation,
- Rural – urban migrations,
- Annually appearing hidden unemployment because of the mechanization in agriculture,
- Permanent unemployment in agriculture,
- Open businesses not meeting the career expectations of new generations,
- The decrease in the growth rate and the investments,
- The large decrease in the number of migrating employees towards other countries,
- The increase in the number of employees returning to Turkey from other countries,
- Applying the capital intensive techniques in industry
- The education system.

Furthermore, Karaali and Ülengin (2005) pointed out a research in their study, which was conducted by five researchers from different Turkish universities who have made researches on macroeconomic problems of Turkey. According to their

findings, the factors believed to be the basic causes of unemployment in Turkey include; participation rate into labor force, population growth rate, literacy rate, urbanization rate, exports, imports, real wages, country competitiveness, unregistered unemployment, technological improvements, capital cost, GDP, per capita income, the agricultural, service and manufacturing sectors' ratio in GDP, income distribution, public sector investments, purchasing power, private sector investments, capacity utilization rate, labor productivity, inflation, uncertainty, domestic demand, union power, skill mismatch, tax burden, minimum wage, unemployment in the previous period, current period unemployment rate, black economy, unemployment payments level, and duration of unemployment payments.

It is claimed that (Başol, 1995), in addition to those factors, rural to urban migration is also one of the reasons for unemployment in Turkey. Migration, especially internal migration, breeds unemployment.

3.2.2.1. The Numerical Indicators of Unemployment in Turkey

When we look at the 1975-2000 years, it can be seen that every year unemployment rates are increasing in Turkey. This can also be seen in Table 3.30 and Figure 3.1. In addition to the increase in unemployment rates, increase in employment is insufficient. When we compare the unemployment rate of 1980 and more contemporary data, we see that according to the data obtained from TURKSTAT (2008b), the employment was 15.7 million in 1980, in 24 years it increased only to 21.7 million people. As a result of this, the employment rate was 51.5 percent in 2004 in Turkey. According to the data obtained from TURKSTAT (2009), the average employment rate of European Union countries is 68.8 percent. With the ratio of 51.5 percent, Turkey has one of the lowest employment rates in the world.

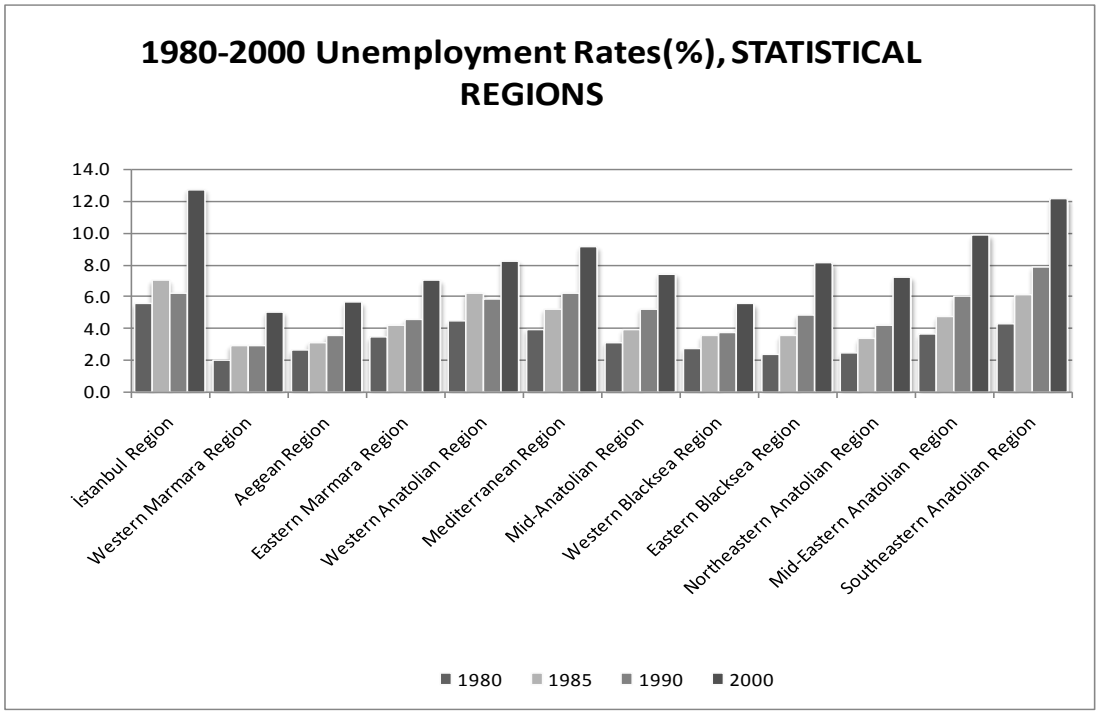

Figure 3.1: Turkey's Unemployment Rates (%) for the Years 1980-2000 (Statistical Regions)

Source: TURKSTAT, 2004.

When we consider the more current data, we see that the unemployment problem is getting worse. Especially after the 2001 crisis, the unemployment problem of Turkey reached historic levels. The national unemployment rate was a record high level of 12.4 percent with numbers unemployed reaching 2.8 million as of first quarter of 2004. The unemployment rate of the educated youth, which are between the age group 20-24 with university education, has reached an alarming 30 percent level (Tansel, 2004).

Similar to many other developing countries, Turkey faces high rates of unemployment. It was 6.5 percent in 2000 and 10.5 percent in 2003 (TURKSTAT, 2008b). According to the data obtained from household labor force survey, unemployment rate in Turkey is recorded as 9.4 percent in July 2008. The

unemployment rate was 11.9 percent in urban areas and 5.6 percent in rural areas (TURKSTAT, 2008b).

Table 3.27: International Comparison of Unemployment Rates (%)

Country Name	1980	1985	1990	2000
Austria		3.6	3.2	3.6
Belgium		11.3	7.2	6.6
Czech Republic				8.8
Denmark		7.8	8.3	4.5
Finland	4.7	5.1	3.1	9.8
France	6.1	10.2	9.2	10
Germany				7.7
Greece		7.8	7	11.1
Hungary				6.4
Iceland				2.3
Ireland		16.7	13	4.3
Italy	7.6	10.3	11.4	10.5
Luxembourg		3	1.6	2.3
Netherlands		13.1	7.4	2.9
Norway	1.6	2.6	5.3	3.4
Portugal	6.7	8.6	4.7	3.9
Spain	11.1	21	16	13.9
Sweden	2.2	3.1	1.8	5.8
Switzerland				2.7
United Kingdom		11.3	6.8	5.5
Turkey		11	8	6.5
Average unemp. rate	5.7	9.2	7.1	6.3

Source: WORL BANK, website.

When we compare the average unemployment rates of some countries and Turkey, as can be seen from the Table 3.27, Turkey's unemployment rates are higher than the average for the selected years.

Table 3.28: Summary for Turkey's Unemployment Rates for the Years 1975-2000

Variable	Obs.	Mean	Std. Dev	Min.	Max.
Unemp. rate 1975	67	1.292239	1.453055	0.04	6.71
Unemp. rate 1980	67	3.158209	1.380508	1.4	7.4
Unemp. rate 1985	67	4.168657	1.663804	1.7	9
Unemp. rate 1990	67	4.986119	2.046617	1.8	11.5
Unemp. rate 2000	67	7.634925	2.863916	3.1	14.5

Source: TURKSTAT, 2004.

Table 3.29: Unemployment Rates (%) of Turkey by Provinces – 1980-2000

	1980	1985	1990	2000		1980	1985	1990	2000
Türkiye	**3.6**	**4.7**	**5.4**	**8.9**	Kocaeli	5.2	6.3	6.9	8.3
Adana	5.5	9.0	10.7	14.3	Konya	3.0	4.8	4.9	7.1
Adıyaman	3.7	5.3	7.5	11.1	Kütahya	1.7	2.1	3.0	4.7
Afyon	1.8	3.1	4.1	5.0	Malatya	3.9	5.3	6.8	8.9
Ağrı	3.5	4.2	5.1	10.0	Manisa	2.6	2.7	2.8	4.5
Amasya	2.7	4.3	4.5	4.9	K.Maraş	4.3	5.0	5.6	7.8
Ankara	5.8	7.6	7.4	11.0	Mardin	3.2	4.8	9.0	13.0
Antalya	2.7	3.2	3.9	7.9	Muğla	2.0	2.6	2.8	4.3
Artvin	2.1	3.0	3.7	7.0	Muş	2.6	3.0	3.6	7.4
Aydın	2.9	2.6	3.1	5.5	Nevşehir	1.9	2.3	2.9	4.8
Balıkesir	2.3	2.8	3.7	5.0	Niğde	2.5	3.0	3.1	3.9
Bilecik	2.1	3.0	3.0	4.7	Ordu	2.2	3.2	5.4	8.1
Bingöl	4.0	5.0	4.7	9.3	Rize	2.5	3.3	5.0	10.3
Bitlis	4.4	7.3	6.4	12.6	Sakarya	2.6	3.5	3.5	7.1
Bolu	2.7	2.3	3.0	4.5	Samsun	2.8	4.1	4.7	6.6
Burdur	2.1	3.0	3.5	4.7	Siirt	4.3	6.9	6.6	10.7
Bursa	3.4	4.0	4.5	9.3	Sinop	1.5	2.0	3.2	4.8
Çanakkale	1.6	2.0	1.9	3.6	Sivas	3.9	4.3	6.0	7.3
Çankırı	1.9	2.9	3.7	5.5	Tekirdağ	2.1	3.5	2.8	6.3
Çorum	1.8	2.9	3.1	5.4	Tokat	2.1	3.4	3.7	6.4
Denizli	2.4	2.2	2.6	4.1	Trabzon	2.7	4.2	4.7	8.3
Diyarbakır	7.1	6.7	11.5	14.2	Tunceli	2.6	4.1	6.4	6.2
Edirne	1.9	3.2	3.0	5.0	Ş.Urfa	4.0	5.9	7.7	14.5
Elazığ	5.4	6.0	9.4	10.7	Uşak	2.8	3.8	4.1	5.7
Erzincan	2.0	3.0	4.1	6.8	Van	3.1	4.1	6.5	10.8
Erzurum	2.4	3.2	5.2	9.1	Yozgat	1.8	2.8	3.4	6.8
Eskişehir	4.6	6.0	6.2	8.4	Zonguldak	7.4	6.6	4.6	5.2
Gaziantep	3.6	6.8	7.7	11.4	Aksaray			4.8	6.6
Giresun	2.9	4.7	5.7	8.9	Bayburt			3.1	4.5
Gümüşhane	1.5	2.6	4.5	6.2	Karaman			5.0	6.5
Hakkari	2.8	2.8	3.8	12.2	Kırıkkale			9.0	13.1
Hatay	4.5	5.3	6.8	6.7	Batman			8.6	17.4
İsparta	2.6	3.8	4.8	6.4	Şırnak			3.7	10.7
Mersin	5.6	7.1	8.3	10.2	Bartın				3.9
İstanbul	5.5	7.0	6.2	12.7	Ardahan				5.0
İzmir	4.6	5.3	5.7	10.8	Iğdır				8.9
Kars	1.7	2.7	3.6	6.1	Yalova				8.1
Kastamonu	1.4	1.7	1.8	3.7	Karabük				8.2
Kayseri	5.2	5.4	6.7	8.5	Kilis				6.2
Kırklareli	2.1	2.9	3.1	5.1	Osmaniye				14.9
Kırşehir	3.5	5.8	5.9	8.2	Düzce				5.4

Source: TURKSTAT, 2004.

Based on the statistics given in Tables 3.28 and 3.29, in 1980; average unemployment rate was 3.15 percent. The city with the minimum unemployment rate was Kastamonu with the rate 1.4 percent, and the maximum was Zonguldak with the rate 7.4 percent.

In the year 1985, average was 4.16 percent. Kastamonu had the minimum unemployment rate which was 1.7 percent and Adana had the highest unemployment rate that is 9 percent. In 1990; the average was 4.98 percent. The minimum level of unemployment rate was again from Kastamonu with the rate 1.8. The city with the highest rate was Diyarbakır with the ratio of 11.5 percent.

In Turkey some cities' or regions' unemployment rates are increasing because of the additional unemployed migrants migrating into those settlements. To give some contemporary examples: According to the "Unemployment's Migration Map Report"; in 2006, Adana, Mersin and Antalya became the attraction centers to the unemployed migrants from the cities which faces a decrease in their employment levels and have high unemployment levels. When the demand for employment creation couldn't be met, the number of unemployed increased (Foundation and Development of the Chamber of Certified Public Accountants of İstanbul, 2007). For instance, in Adana and Mersin, number of unemployed increased between the years 2004 and 2006 from 160,000 to 209,000 (TURKSTAT, 2008b).

Istanbul, the city with one of the highest unemployment rates in Turkey, provided employment for 3,677 million people in the year 2006. The labor force of the city was 3,784 million people in 2004. In 2006, also by the effect of the migration, this number rose to 4,143 million people. Even though Istanbul created employment for 359.000 people between the years 2004 and 2006, it only decreased its number of unemployed people from 467,000 to 466,000 (TURKSTAT, 2008b). The employment opportunities in Istanbul are not even sufficient for the cities local unemployed people. Some migrants, those who couldn't find jobs in their new

settlements, started to search ways to turn back home (Foundation and Development of the Chamber of Certified Public Accountants of İstanbul, 2007).

Nonetheless, according to the report prepared by Foundation and Development of the Chamber of Certified Public Accountants of İstanbul (2007), the unemployment in the cities which gives away migrants is not decreasing. The reason of this is the regression of employment in the agricultural sector. For instance; between the years 2004 and 2006, the number of unemployed people in Diyarbakır and Şanlıurfa has decreased 1000 people. It was 70.000 people in 2004 and 69.000 in 2006. But the unemployment rate increased to 12 percent from 10.8 percent (TURKSTAT, 2008b).

The labor force of Şanlıurfa, Diyarbakır, Gaziantep, Adıyaman, Kilis, Mardin, Batman, Şırnak and Siirt (Southeastern Anatolia Region) was 1,639 million people in 2004 and it decreased to 1,452 million in 2006. In the same way, the employment was decreased from around 1.4 million people to 1.2 million. The employment diminished 208.000 people, so the number of unemployed increased to 204.000 from 183.000 people (ibid).

3.3. Relating the Internal Migration and Unemployment in Turkey

One of the major macroeconomic problems in Turkey is unemployment. People migrate from rural to urban areas (mainly from east to west) in search of a job. When people migrate, do they really find a job, or do they contribute to the existing unemployment in the place of destination? Does the unemployment in urban areas really affected from the rural urban migration? How does the unemployment rates in Turkey affected from the internal migration?

To see the effect of net migration on unemployment rates in Turkey, I used econometric techniques for the years 1975-1980, 1980-1985 and 1985-1990. I used these years for the regressions because there is scarcity of data according to the variables that I used in the regressions and the model. In order to increase the

observation number and to get favorable results, the variables (Unemployment rates as the dependent variable, Net Migration rates as independent variable, Gross Provincial per capita rates as another independent variable and Population Density as the instrumental variable) used in the model are employed according to the 67 provinces (Nuts Level3) of Turkey. Since the only relevant data I could obtain for all these variables according to Nuts Level 3 data are between the years 1975 and 1990, the regressions are made for those three periods (1975-1980, 1980-1985, and 1985-1990).

Table 3.30 presents the estimation results for the years 1975-1980 by using Ordinary Least Square (OLS) method. According to the table there is a positive relation between net migration rates and unemployment rates for the period 1975-1980. One unit decrease in net migration rate decreases 0.13 units of unemployment rate.

Table 3.30: Regression of Unemployment on Migration for the Years 1975-1980

variables	**coef**	**t-value**			
Net Migration(NM)	0.1319717	3.02		**R-squared**	0.1232
constant	3.367764	19.40			

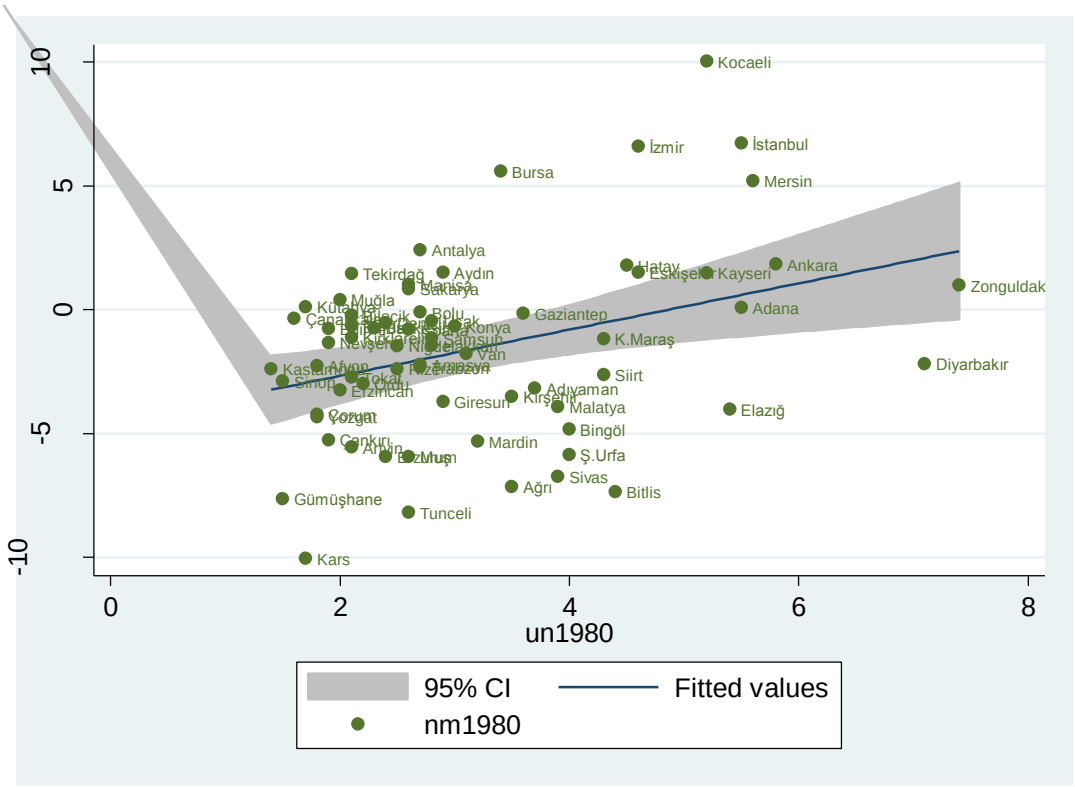

Figure 3.2: The Relation between Unemployment Rates (%) and Net Migration Rates (%) for the Period 1975-1980 in Turkey (67 Provinces)

Source: TURKSTAT, 2004.

When we look at the Table 3.31, we see that net migration rate is statistically significant with the coefficient of 0.14 for the years 1980-1985. This means that when the net migration rate increases, the percentage change of unemployment rate increases 0.14 units in Turkey.

Table 3.31: Regression of Unemployment on Migration for the Years 1980-1985

variables	Coef	t-value		
Net Migration (NM)	0.140131	2.08	**R-squared**	0.0627
constant	4.374296	19.75		

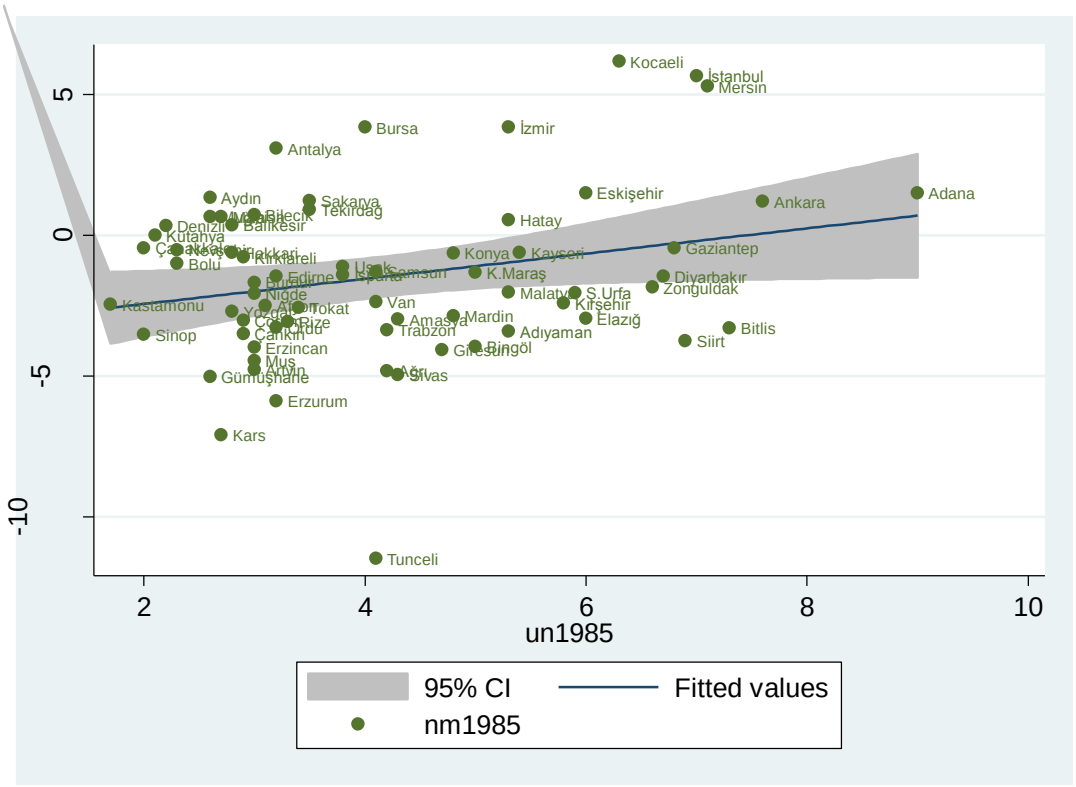

Figure 3.3: The Relation between Unemployment Rates (%) and Net Migration Rates (%) for the Period 1980-1985 in Turkey (67 Provinces)

Source: TURKSTAT, 2004.

When I regress the unemployment rates for the year 1990 data on "1985-1990 net migration rates" data, I found that a one unit increase in net migration rate leads to 0.02 unit increase in unemployment rates, which is given in Table 3.32 and can be seen in Figure 3.4.

Table 3.32: Regression of Unemployment on Migration for the Years 1985-1990

variables	coef.	t-value	
Net Migration(NM)	0.021472	0.45	**R-squared** 0.0031
constant	5.049193	17.56	

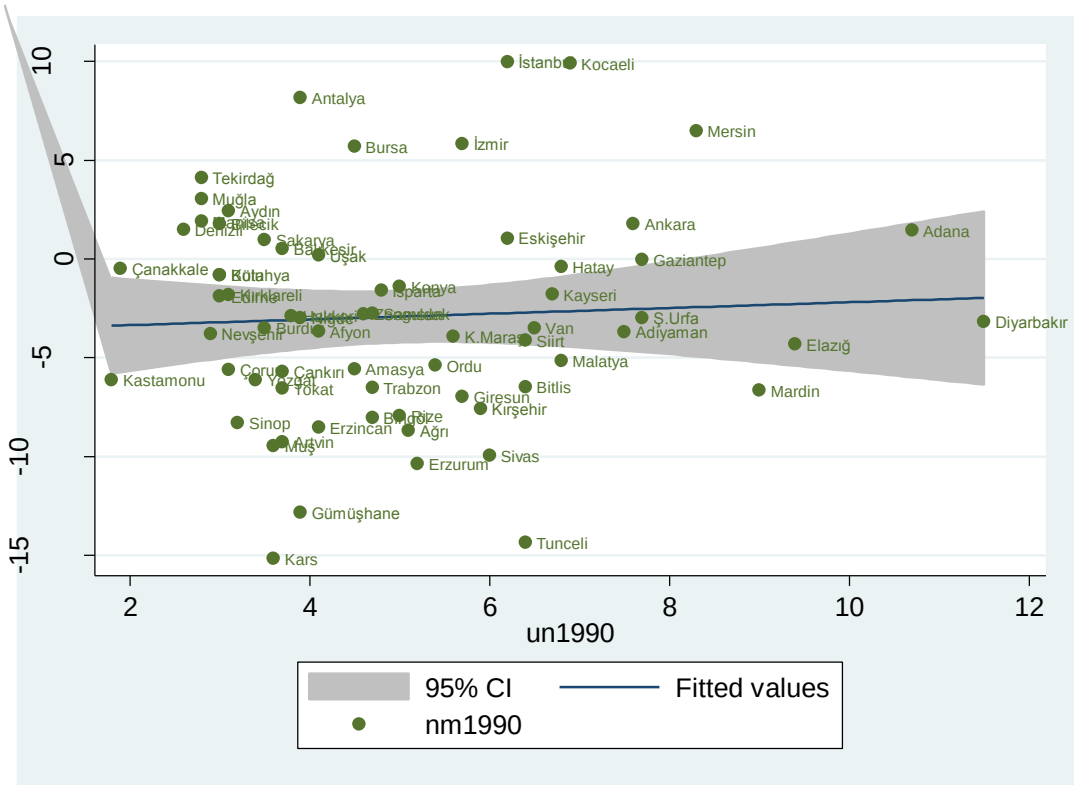

Figure 3.4: The Relation between Unemployment Rates (%) and Net Migration Rates (%) for the Period 1985-1990 in Turkey (67 Provinces)

Source: TURKSTAT, 2004.

According to the estimation results for these three periods in Turkey, people leave their home in Turkey in search of a job. This increases the net migration rates. Some of them find jobs. All over Turkey, this migration process for job search seems to be increasing the unemployment rates between the years 1975 and 1990. This can also be seen in the figures 3.2, 3.3 and 3.4. But what happens to the urban places that takes large amounts of unemployed migrants?

Table 3.33: Regression of Migration on Unemployment for the Years 1985-1990 for Cities with Positive Net Migration Rates (%)

var	coef.	t-value	
Net migration (NM)	0.1760402	1.00	**R-squared** 0.0592
constant	4.256867	5.01	

In order to find the answer for the above question I regressed the unemployment rates for the year 1990 data on "1985-1990 net migration rates" data for the cities with positive net migration rates. The results of these estimations are given in Table 3.33. It could be seen that the coefficient of net migration is statistically insignificant. Unfortunately the observation number is only 18 and this won't give us a healthy result.

Table 3.34: Regression of Migration on Unemployment for the Years 1980-1985 for Cities with Positive Net Migration Rates (%)

var	coef.	t-value	
Net migration (NM)	0.5616142	2.53	**R-squared** 0.2737
constant	3.366343	5.41	

In the same way, I regressed the unemployment rates for the year 1985 data on "1980-1985 net migration rates" data for the cities with positive net migration rates. The results of these estimations are given in Table 3.34. It could be seen that the coefficient of net migration is statistically significant. This means one unit of increase in net migration rates increases the unemployment rates by 0.5 units.

Table 3.35: Regression of Migration on Unemployment for the Years 1975-1980 for Cities with Positive Net Migration Rates (%)

var	coef.	t-value		
Net migration (NM)	0.1850823	0.1375902	**R-squared**	0.1016
constant	3.595962	0.5345342		

There was the same problem with the data set 1975-1980 period. When I regress the unemployment rates for the year 1980 data on "1975-1980 net migration rates" data for the cities with positive net migration rates, the coefficient of net migration is again statistically insignificant. This can be seen in Table 3.35. To make more reliable analyses, panel data techniques will be used in chapter 6 to understand whether an increase in net migration rates increases the unemployment rates or not in those cities with positive net migration rates.

CHAPTER 4

METHODOLOGY

In this thesis, in order to explore the connection between rural - urban migration and unemployment in Turkey and examine whether this has an effect on increasing the unemployment rates for the years 1980, 1985 and 1990, I used Two Stage Least Square (2SLS) method for a panel of 67 provinces of Turkey, 26 regions of Turkey (Nuts Level 2 Statistical Regions) and 12 regions of Turkey (Nuts Levl 1 Statistical Regions). To test for the potential endogeneity of migration rate, I use the Hausman test. In this chapter, those estimation procedures will be explained. The classification of statistical regions of Turkey is given in Appendix B.

4.1. Panel Data Estimation

The data set used in this thesis follows the provinces in time. Therefore it is a panel (longitudinal) data set. In this study, the primary estimation method of the models being constructed depends on panel data techniques. Therefore the estimation methods with panel data will be presented in this section. Furthermore the advantages and disadvantages of the panel data technique will be given.

Panel data can be defined as, data including several observations (from several time periods) for each individual/household/firm/country etc. It is distinguished between time-series dominant data (TSCS data) and cross-sectional dominant data (CSTS data) (Boockmann, 2008; Plümper and Troeger 2009).

The pooling of observations on a cross section of countries, firms, households and soon over several time periods can be achieved by surveying a number of individuals or households and following them over time (Baltagi, 2005). “By following given

individuals or firms over time as they change status…, one can construct a proper recursive structure to study the before –after effect" (Hsiao, 2003: 4).

A panel data regression has a double subscript on its variables and it differs from a regular cross-series or time-series regression. A simple panel data regression with a single explanatory variable is given below:

$$y_{it} = \alpha + X'_{it}\beta + u_{it}\text{, where } i = 1,.....,N \text{ and } t = 1,.....,T \qquad (4.1)$$

where i denotes the individuals, households, firms, countries and soon (cross-section dimension) and t denotes the time (time-series dimension). Here α is scalar, β is $K \times 1$ and X_{it} is the it th observation on K explanatory variables (Baltagi, 2005).

The choice of panel data is motivated by our desire to provide greater number of observations to improve efficiency of the estimation. When we make estimations for each time period, we only have 67 observations. Whereas when panel method is applied, our number of observations will increase and we will obtain more reliable results.

Panel data may have time effects, group effects or both, and these effects are analyzed by fixed effect and random effect models. The fixed effect model examines cross-section differences in intercepts, assuming the same slopes and constant variance across groups. Fixed effect models uses within estimators by introducing least square dummy variable (LSDV). Thus, ordinary least squares (OLS) regressions with dummies are fixed effect models (Park, 2008; Yaffee, 2003).

The random effect model, on the other hand, estimates variance components for groups and error, assuming constant term as a random outcome variable. The random outcome is a function of a mean value plus a random error. The difference among

groups or time periods lies in the variance of the error term. But this cross-sectional specific error term, which indicates the deviation from the constant of the cross-sectional unit must be uncorrelated with the errors of the variables if this is to be modeled. Fixed effects are tested by the (incremental) F test, while random effects are examined by the Lagrange multiplier (LM) test (ibid).

4.1.1. Fixed Effect Estimation

In a one way error component regression model, only the individual specific effect, μ_i , or only the time specific effect, λ_t is included in the composite error (Hüsamoğlu, 2008). In most of the panel data applications, a one-way error component model for the disturbances with equation (4.2.), given below, is utilized:

$$u_{it} = \mu_i + \nu_{it} \qquad (4.2)$$

Here, μ_i denotes the unobservable individual-specific effect and ν_{it} denotes the remainder disturbance (Baltagi, 2005)[22].

In the fixed effect model the μ_i are assumed to be estimated and the remainder disturbances stochastic with ν_{it} independent and identically distributed IID$(0, \sigma_\nu^2)$. Here the X_{it} 's are assumed independent from the ν_{it} for all i and t.

A simple regression is given below:

$$y_{it} = \alpha + \beta x_{it} + \mu_i + \nu_{it} \qquad (4.3)$$

[22] μ_i is time-invariant and accounts for any individual-specific effect that is not contained in the regression. On the other hand ν_{it} varies with individuals and time and can be thought of as the usual disturbance in the regression (Baltagi, 2005).

By averaging (4.3) over time, one can obtain[23]

$$\bar{y}_{i.} = \alpha + \beta \bar{x}_{i.} + \mu_i + \bar{v}_{i.} \quad \text{for} \quad i = 1,\ldots..,N$$

(4.4)

From subtracting (4.4) from (4.3) one can deduce that

$$y_{it} - \bar{y}_{i.} = \beta(x_{it} - \bar{x}_{i.}) + (v_{it} - \bar{v}_{i.}) \tag{4.5}$$

Furthermore averaging (2.8) across all observations gives us the below equation:

$$\bar{y}_{..} = \alpha + \beta \bar{x}_{..} + \bar{v}_{..} \tag{4.6}$$

Here, Baltagi (2005) utilizes the restriction of $\sum_{i=1}^{N} \mu_i = 0$ and he states that this is an arbitrary restriction on the dummy variable coefficients to avoid the dummy variable trap, or perfect multicollinearity.

When we consider the regression model (4.1) with two-way error components disturbances, we get

$$u_{it} = \mu_i + \lambda_t + v_{it} \text{ , where } i = 1,\ldots..,N \text{ and } t = 1,\ldots..,T \tag{4.7}$$

The equation above is called the composite error. In this equation μ_i denotes the unobservable time effect and it is individual-invariant and it accounts for any time-specific effect that is not comprised in the regression. The individual specific effect

[23] Here the restriction of $\sum_{t=1}^{T} \lambda_t = 0$ is utilized (Hüsamoğlu, 2008).

(μ_i) captures the unobserved heterogeneity of individuals (Hüsamoğlu, 2008 and Baltagi, 2005).

When μ_i and λ_t are assumed to be fixed parameters to be estimated and the remainder disturbances are stochastic with $v_{it} \sim$ IID$(0, \sigma_v^2)$, then (4.7) represents a two-way fixed effects error component model. Here Baltagi (2005) assumes the X_{it} 's are independent from the v_{it} for all i and t. Than by averaging (4.3) over individuals, one could get[24]

$$\bar{y}_{.t} = \alpha + \beta \bar{x}_{.t} + \lambda_t + \bar{v}_{.t} \tag{4.8}$$

From the equations (4.3), (4.4), (4.6) and (4.8), one can deduce the equation below:

$$(y_{it} - \bar{y}_{i.} - \bar{y}_{.t} + \bar{y}_{..}) = (x_{it-} \bar{x}_{.i} - \bar{x}_{.t} + \bar{x}_{..})\beta + (v_{it} - \bar{v}_{i.} - \bar{v}_{.t} + \bar{v}_{..}) \tag{4.9}$$

The OLS estimation on this model provides the fixed effect estimator of β .[25] Truthfully the OLS estimation on (4.9) gives $\tilde{\beta}$, which is the Within estimator for the two-way model. Furthermore the Within estimate of the intercept can be deduced from $\tilde{\alpha} = \tilde{y}_{..} - \tilde{\beta}\bar{x}_{..}$ and those of μ_i and λ_t are given by $\tilde{\mu}_i = (\bar{y}_{i.} - \bar{y}..) - \tilde{\beta}(\bar{x}_{i.} - \bar{x}_{..})$ and $\tilde{\lambda}_t = (\bar{y}_{.t} - \bar{y}..) - \tilde{\beta}(\bar{x}_{.t} - \bar{x}_{..})$ (Baltagi, 2005).

[24] The restriction $\sum_i \mu_i = 0$ is utilized to avoid the dummy variable trap. In the same way the averages defined in (4.4) and (4.6) still hold using $\sum_t \lambda_t = 0$ (Baltagi, 2005).

[25] Here the fixed effect estimator of β is unbiased and consistent (Hüsamoğlu, 2008).

Fixed effect estimation allows the researcher for the possible correlation between the explanatory variables and the unobservable effects. However, when the individual or time invariant exist in the regression equation as additional explanatory variables (i.e. time dummies) then the procedure of within regression estimation eliminates the effects of those variables. On the other side, the random effect estimation assumes the unobservable effects μ_i and λ_t as random and therefore requires different methods of estimation (Hüsamoğlu, 2008).

4.1.2. Random Effect Estimation

Baltagi (2005), points out that, there are too many parameters in the fixed effect model. The random effects model is appropriate if one is drawing *N* individuals randomly from a large population. *N* is usually large and if a fixed effect model is used in this case, it would lead to a big loss of degrees of freedom. Baltagi (ibid) emphasizes that the loss of degrees of freedom can be avoided if μ_i can be assumed random.

In the one-way error component regression model, it is assumed that the $\mu_i \sim$ IID$(0, \sigma_\mu^2)$, $\nu_{it} \sim$ IID$(0, \sigma_\nu^2)$ $\lambda_t \sim$ IID$(0, \sigma_\lambda^2)$ and the μ_i are independent of the ν_{it} and X_{it} are independent of the ν_{it} and μ_i for all i and t.

When we assume the $\mu_i \sim$ IID$(0, \sigma_\mu^2)$, $\nu_{it} \sim$ IID$(0, \sigma_\nu^2)$ and $\lambda_t \sim$ IID$(0, \sigma_\lambda^2)$ independent of each other, then this is a two-way random effect model[26]. The disturbances, u_{it} are homoskedastic with $\text{var}(u_{it}) = \sigma_\mu^2 + \sigma_\lambda^2 + \sigma_\nu^2$ for all *i* and *t*.

$$\text{Since } \text{cov}(u_{it}, u_{js}) = \sigma_\mu^2 \qquad \text{i=j, t}\neq\text{s} \qquad (4.10)$$

$$= \sigma_\lambda^2 \qquad \text{i}\neq\text{j, t=s}$$

[26] X_{it} is independent of the ν_{it}, λ_t and μ_i for all i and t.

and equals to zero otherwise; the correlation coefficient is given below (Baltagi, 2005):

$$\begin{aligned} \text{correl}(u_{it}, u_{js}) &= \sigma_\mu{}^2/(\sigma_\mu{}^2 + \sigma_\lambda{}^2 + \sigma_v{}^2 \qquad \text{i=j, t}\neq\text{s} \\ &= \sigma_\lambda{}^2/(\sigma_\mu{}^2 + \sigma_\lambda{}^2 + \sigma_v{}^2 \qquad \text{i}\neq\text{j, t=s} \\ &= 1 \qquad \text{i=j, t}\neq\text{s} \\ &= 0 \qquad \text{i}\neq\text{j, t=s} \end{aligned} \tag{4.11}$$

μ_i and λ_t are in the composite error for all *i* and *t* and the u_{it} are serially correlated across individuals and time. This can be seen above. A similar correlation would lead biased estimators when pooled OLS estimation of (4.3) is employed. Using feasible generalized least squares (GLS) estimation for the two-way error component model can help researcher to get rid of this correlation. The consequent estimate would be the GLS estimate of β, that is $\hat{\beta}_{GLS}$ (Hüsamoğlu, 2008).

4.1.3. The Hausman Test Comparing the Fixed Effect or Random Effect Estimators

In general, the accepted way of choosing between fixed and random effects is running a Hausman test. The research question is whether there is significant correlation between the regressors and unobserved (unit of observation) specific random effects. If there is such a correlation, the random effects model would be inconsistently estimated and the fixed effects model would be chosen. On the other hand the random effects model may be more powerful if there is no such correlation (Yaffee, 2003).

The test for this correlation is a comparison of the covariance matrix of the regressors in the Least Squares Dummy Variable (LSDV) model with those in the random effects model. The null hypothesis is; there is no correlation. The correlations of the random effects with the regressors are statistically insignificant if there is no statistically significant difference between the covariance matrices of the two models. The Hausman test is a kind of Wald χ 2 test with k-1 degrees of

freedom[27] on the difference matrix between the variance-covariance of the LSDV with that of the Random Effects model (ibid).

When running the Hausman test to compare fixed with random effects in Stata; first I estimated the fixed effects model, save the coefficients to compare them with the results of the next model, than I estimated the random effects model, and then do the comparison.

> The Hausman test, tests the null hypothesis that the coefficients estimated by the efficient random effects estimator are the same as the ones estimated by the consistent fixed effects estimator. If they are (insignificant P-value, Prob>chi2 larger than .05) then it is safe to use random effects. If you get a significant P-value, however, you should use fixed effects (Stock and Watson, 2003).

4.1.4. Advantages and Disadvantages of Panel Data Estimation

For economic researches, panel data set have some major advantages over conventional cross-sectional or time series data sets. It allows the researcher to identify and measure effects that are simply not detectable in and construct and test more complicated behavioral models than purely time-series or cross-sectional models. It provides a more accurate description of an individual's behavior by pooling the data (Baltagi, 2005; Hsiao, 2003).

Panel data usually provides a large number of data points. Thus the degrees of freedom increases and the collinearity among explanatory variables reduces. For instance time series data sets generally face with the problem of multicollinearity, however panel data can vary across time and between individuals and this facilitates more information which reduces problems of multicollinearity. Hence panel data improves the efficiency of econometric estimates. By using panel data, researcher analyzes a number of important economic questions that can't be addressed using

[27] Where k=number of regressors.

time-series or cross-section data sets (Hsiao, 2003; Boockmann, 2008; Plümper and Troeger 2009).

Besides providing greater number of observations and improving efficiency of the estimation, panel data allows estimation of dynamic relationships even if we only have a small number time periods. In addition, panel data is necessary for the estimation of intertemporal relations, lifecycles and intergenerational models. Moreover, it enables us controlling for some types of individual heterogeneity and this reduces the omitted variables bias[28] (Baltagi, 2005; Boockmann, 2008; Plümper and Troeger 2009). Researcher would better be able to control in a more natural way for the effects of missing or unobserved variables by utilizing information on both the intertemporal dynamics and the individuality of the entities being investigated (Hsiao, 2003).

On the other hand, some problems of using panel data may arise on account of the nature of the data. First of all there is design and data collection problems which includes; incomplete account of the population of interest, lack of cooperation of the respondent or because of interviewer errors, respondent not remembering correctly, frequency of interviewing and so on (Baltagi, 2005).

Second disadvantage could arise from distortions of measurement errors. Such errors may arise because of memory errors, faulty responses due to unclear questions, inappropriate informants, deliberate distortion of responses, interviewer effects and misrecording of responses (ibid).

Third, typical micro panels involve annual data covering a short time span for each individual which means that asymptotic arguments rely on the number of individuals tending to infinity. This increases the time span without cost either and increases the

[28] Omitted variables bias is a very common problem, both in simple regression models and in multiple regression. It is often the reason for the appearance of counter-intuitive signs or sizes of estimated coefficients on variables which are included as regressors in a model.

chances of attrition and the computational difficulty for limited dependent variable panel data models (ibid).

One other disadvantage is that the sample may not be drawn from the population and this result in selectivity problems including self selectivity, nonresponse and attrition (Hsiao, 2003; Baltagi, 2005).

Because of the difficulty of availability of such data, the use of panel data estimation is not so prevalent in Turkey. For this reason, conducting a study about any kind of subject depending on panel data analysis for Turkey is less possible (Hüsamoğlu, 2008).

4.2. Two Stage Least Squares Estimation (2SLS)

The assumption of x_i and u_i are uncorrelated is crucial, but there are several models that contain variables that are measured which this assumption is undefendable. The alternative method of estimation for such cases is called the method of Instrumental variables (IV). The least squares estimators is a special case but the IV method is more general (Greene, 2003).

The first structural equation in matrix form can be written as follows:

$$y_1 = Y_1\alpha_1 + X_1\beta_1 + u_1 \qquad (4.12)$$

In this equation, y_1 and u_1 are, $(T \times 1)$, Y_1 denotes the right hand side endogenous variables which is $(T \times g_1)$ and X_1 is the set of right hand side included exogenous variables which is $(T \times k_1)$, α_1 is of dimension g_1 and β_1 is of dimension k_1. Furthermore $Z_1 = [Y_1, X_1]$ and $\delta_1 = (\alpha_1^{'}, \beta_1^{'})$. It is required that the existence of excluded exogenous variables, from (4.12), call them X_2, enough to identify this equation. These excluded exogenous variables appear in the other equations in the

simultaneous model. Let the set of all exogenous variables be $X = [X_1, X_2]$ and X is of dimension $(T \times k_1)$. In order to satisfy the order condition for equation (4.12) one must have $(k - k_1) \geq g_1$. If all the exogenous variables in the system are included in the first step regression, that is, Y_1 is regressed on X to get $\hat{Y}_1$, the resulting second stage least squares estimator obtained from regressing y_1 on $\hat{Y}_1$ and X_1 is called two-stage least squares (2SLS) (Baltagi, 2002).

Wooldridge (2002) considered a linear population model to motivate the need for the method of instrumental variables,

$$y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + ... + \beta_k x_k + u \quad (4.13)$$

$$E(u) = 0, \quad Cov(x_j, u) = 0, \quad j = 1,2,\ldots,K-1 \quad (4.14)$$

where x_K might be correlated with *u***.** this means, in equation (4.13), the explanatory variables $x_1, x_2, ..., x_{K-1}$ are exogenous, but x_K is potentially endogenous. OLS estimation of equation (4.13) generally results in inconsistent estimators of all the β_j if $Cov(x_K, u) \neq 0$. Furthermore, any of the parameters in equation (4.13) cannot consistently be estimated without more information (Wooldridge, 2002).

A general solution to the problem of an endogenous explanatory variable is provided by the method of instrumental variables (IV). In order to use the IV approach with x_K endogenous, an observable variable, that is z_1, not in equation (4.13) that satisfies two conditions is needed. The first condition is that, z_1 must be uncorrelated with *u*, that is:

$$Cov(z_1, u) = 0 \quad (4.15)$$

[29] Otherwise stated, like $x_1, x_2, ..., x_{K-1}, z_1$ is exogenous in equation (4.13).

The second condition involves the relationship between z_1 and the endogenous variable, x_K**.** An accurate statement requires the linear projection of x_K onto all the exogenous variables that is shown below:

$$x_K = \delta_0 + \delta_1 x_1 + \delta_2 x_2 + ... + \delta_{K-1} x_{K-1} + \theta_1 z_1 + r_K \qquad (4.16)$$

The linear projection in this equation is called a reduced form equation for the endogenous explanatory variable x_K. A reduced form always involves writing an endogenous variable as a linear projection onto all exogenous variables in the context of single-equation linear models (ibid).

In equation (4.16), by definition of a linear projection error, $E(r_K) = 0$ and r_K is uncorrelated with $x_1, x_2, ..., x_{K-1}$, and z_1. The key assumption on this linear projection is that; $\theta_1 \neq 0$ (the coefficient on z_1 is nonzero). This condition means that, once the other exogenous variables $x_1, x_2, ..., x_{K-1}$ have been netted out, z_1 is partially correlated with x_K. If x_K is the only explanatory variable in equation (4.13), then the linear projection is $x_K = \delta_0 + \theta_1 z_1 + r_K$, where $\theta_1 = Cov(z_1, x_K)/Var(z_1)$; and so the condition $\theta_1 \neq 0$ and $Cov(z_1, x_K) \neq 0$ are the same (ibid).

When z_1 satisfies conditions $Cov(z_1, u) = 0$ and $\theta_1 \neq 0$, then it is said to be an instrumental variable (IV) candidate for x_K [30]. Since $x_1, x_2, ..., x_{K-1}$ are already uncorrected with ***u*****,** they serve as their own instrumental variables in equation (4.13)[31].

By plugging the equation (4.16) into the equation (4.13), from the structural equation (4.13) and the reduced form for x_K, one could obtain a reduced form for *y* :

[30] Sometimes z_1 is called an instrument for x_K.

[31] i.e. the full list of instrumental variables is the same as the list of exogenous variables, but it is often just referred to the instrument for the endogenous explanatory variable.

$$y = \alpha_0 + \alpha_1 x_1 + \alpha_2 x_2 + ... + \alpha_{K-1} x_{K-1} + \lambda_1 z_1 + v \quad (4.17)$$

In this equation, $v = u + \beta_K r_K$ is the reduced form error, $\alpha_j = \beta_j + \beta_K \delta_j$, and $\lambda_1 = \beta_K \theta_1$. By the assumptions of Wooldridge (2002), *v* is uncorrected with all explanatory variables in equation (4.17), and therefore OLS consistently estimates the reduced form parameters, the α_j and λ_1 (ibid)**.**

The assumptions that Wooldridge (2002) have made on the instrumental variable z_1 solve the identification problem for the β_j in equation (4.13) is shown below[32]. The equation (4.13) is written as:

$$y = \mathbf{x}\boldsymbol{\beta} + u \quad (4.18)$$

where the constant is absorbed into **x** so that $\mathbf{x} = (1, x_2, ..., x_K)$. The $1 \times K$ vector of all exogenous variables is written as, $\mathbf{z} \equiv (1, x_2, ..., x_{K-1}, z_1)$. The assumptions (4.14) and (4.15) imply the *K* population orthogonality conditions

$$E(\mathbf{z}'u) = 0 \quad (4.19)$$

Multiplying equation (4.18) through by **z**', taking expectations, and using equation (4.19), one would obtain the following equation:

$$[E(\mathbf{z}'\mathbf{x})]\boldsymbol{\beta} = E(\mathbf{z}'y) \quad (4.20)$$

In this equation, E(**z'x**) is $K \times K$ and E(**z**'y) is $K \times 1$. Equation (4.20) represents a system of *K* linear equations in the *K* unknowns $\beta_1, \beta_2, ..., \beta_K$. This system has a

[32] By identification it is meant that one can write the β_j in terms of population moments in observable variables.

unique solution if and only if the $K \times K$ matrix E(**z'x**) has full rank; that is, rank E(**z'x**) = K[33] in which case the solution is as follows:

$$\boldsymbol{\beta} = [E(\mathbf{z}'\mathbf{x})]^{-1} E(\mathbf{z}' y) \tag{4.21}$$

The expectations E(**z'x**) and E(**z**'y) can be consistently estimated using a random sample on ($\mathbf{x}, y, z_1$) and therefore the equation (4.21) identifies the vector $\boldsymbol{\beta}$.

Given a random sample $(\mathbf{x}_i, y_i, \mathbf{z}_{i1}) : i = 1,2,..., N$ from the population, the instrumental variables estimator of β is given below:

$$\hat{\boldsymbol{\beta}} = \left(N^{-1} \sum_{i=1}^{N} \mathbf{z}'_i \, \mathbf{x}_i \right)^{-1} \left(N^{-1} \sum_{i=1}^{N} \mathbf{z}'_i \, y_i \right) = (\mathbf{Z}' \, \mathbf{X})^{-1} \mathbf{Z}' \, \mathbf{Y}$$

where **Z** and **X** are $N \times K$ data matrices and **Y** is the $N \times 1$ data vector on the y_i . The consistency of this estimator is immediate from equation (4.21) and the law of large numbers (ibid).

Considering again the model (4.13) and (4.14), where x_K can be correlated with *u,* and assuming that there are more than one instrumental variable for x_K : Let $z_1, z_2, ..., z_M$ be variables such that

$$Cov(z_h, u) = 0 , \quad h = 1,2,\ldots,M \tag{4.22}$$

in order that each z_h is exogenous in equation (4.13). One could have *M* different IV estimators if each of these has some partial correlation with x_K . Now by defining the

[33] E(z'x) = *K* is the rank condition for identification (Wooldridge, 2002).

vector $\hat{\mathbf{x}}_{\mathbf{i}} \equiv (1, x_{i1},..., x_{i,K-1}, x_{iK}), i = 1,2,..., N$ for each observation i and using $\hat{\mathbf{x}}_i$ as the instruments for $\mathbf{x}_i$ gives the following IV estimator:

$$\hat{\boldsymbol{\beta}} = \left(\sum_{\mathbf{i=1}}^{N} \hat{\mathbf{x}}'_i \, \mathbf{x}_i \right)^{-1} \left(\sum_{i=1}^{N} \hat{\mathbf{x}}'_i \, y_i \right) = (\hat{\mathbf{X}}' \mathbf{X})^{-1} \hat{\mathbf{X}}' \mathbf{Y} \tag{4.23}$$

where in this equation unity is also the first element of $\mathbf{x}_i$. The IV estimator in equation (4.23) turns out to be an OLS estimator. To see this fact, it should be noted that the $\mathrm{N} \times (\mathrm{K}+1)$ matrix $\hat{\mathbf{X}}_i$ can be expressed as $\hat{\mathbf{X}} = \mathbf{Z}(\mathbf{Z}' \mathbf{Z})^{-1} \mathbf{Z}' \mathbf{X} = \mathbf{P}_Z \mathbf{X}$[34]. Therefore, $\hat{\mathbf{X}}' \mathbf{X} = \mathbf{X}' \mathbf{P}_Z \mathbf{X} = (\mathbf{P}_Z \mathbf{X})' \mathbf{P}_Z \mathbf{X} = \hat{\mathbf{X}}' \hat{\mathbf{X}}$. Plugging this expression into equation (4.23) shows that the IV estimator that uses instruments $\hat{\mathrm{x}}_i$ can be written as $\hat{\boldsymbol{\beta}} = (\hat{\mathbf{X}}' \hat{\mathbf{X}})^{-1} \hat{\mathbf{X}}' \mathbf{Y}$ and the name "two-stage least squares" comes from this procedure (ibid).

Wooldridge (2002) summarizes the steps in obtaining $\hat{\beta}$ as follows; first obtain the fitted values $\hat{x}_K$ from the regression x_K on $1, x_1, x_2,..., x_{K-1}, z_1,..., z_M$ where the subscript *i* is omitted for simplicity. This is called the first-stage regression. Second, run the OLS regression *y* on 1, $x_1, x_2,..., x_{K-1}, \hat{x}_K$,which is called the second-stage regression, and it produces the $\hat{\beta}_j$ (ibid: 83-91).

4.2.1. Testing for Endogeneity

Endogeneity can arise from reverse causality that is, when one supposedly exogenous regressor is also a dependent variable that may actually be determined by the variable that the model is trying to explain. This is a model of simultaneous equations where two or more variables appear as both dependent and explanatory variables. The problem can be solved with a two-stage estimation using an

[34] The projection matrix $\mathbf{P}_Z = \mathbf{Z}(\mathbf{Z}'\mathbf{Z})^{-1} \mathbf{Z}'$ is idempotent and symmetric (Wooldridge, 2002).

instrumental variable (IV) technique with appropriate instruments for every endogenous variable in the model. The IV estimation requires finding a good instrument, which must be uncorrelated with the error term but should be correlated with the endogenous variable and it should not appear on its own in the equation of interest. (Xenogiani, 2006)

To test for the potential endogeneity, Wooldridge (2002) explains the Hausman test. The linear model and a single possibly endogenous variable is given below:

$$y_1 = \mathbf{z}_1\delta_1 + \alpha_1 y_2 + u_1 \tag{4.24}$$

where y_1 denotes the dependent variable, y_2 denotes the potentially endogenous explanatory variable, $\mathbf{z}_1$ is $1\times L$ (including a constant), δ_1 is $1\times L$ and u_1 is the unobserved disturbance[35]. The set of all exogenous variables is denoted by the $1\times L$ vector and $\mathbf{z}_1$ is a strict subset of $\mathbf{z}$. The maintained exogeneity assumption is given by $E(\mathbf{z}'u_1) = 0$. In addition to this it is also assumed that equation (4.24) is defined when $E(y_2u_1) \neq 0$, requiring z have at least one element not in $\mathbf{z}_1$, which is the order condition. The rank condition is that at least one element of $\mathbf{z}$ not in $\mathbf{z}_1$ is partially correlated with y_2 [36]. Wooldridge (2002) tests the null hypothesis that y_2 is actually exogenous under these assumptions.

Comparing the OLS and 2SLS estimators of $\boldsymbol{\beta}_1 \equiv (\delta_1', \alpha_1)'$ as a formal test of endogeneity is suggested by Hausman. According to this technique, if y_2 is uncorrelated with u_1, the 2SLS and OLS estimators should differ only by sampling

[35] "As in all 2SLS contexts, y_2 can be continuous or binary, or it may have continuous and discrete characteristics; there are no restrictions"(Wooldridge, 2002).

[36] After netting out $\mathbf{z}_1$.

error and this reasoning leads to the Hausman test for endogeneity (Wooldridge, 2002).

The linear projection of y_2 on z in error for is written as below to derive the regression-based test[37]:

$$y_2 = \mathbf{z}\boldsymbol{\pi}_2 + v_2 \tag{4.25}$$

$$E(\mathbf{z}'v_2) = 0 \tag{4.26}$$

Since u_1 is uncorrelated with **z**, from the equations (4.25) and (4.26), y_2 is endogenous if and only if $E(u_1 v_2) \neq 0$. On this wise, it can be tested whether the structural error u_1 is correlated with the reduced form error v_2. In order to do that, the linear projection of u_1 onto v_2 in error forms is written as follows:

$$u_1 = \rho_1 v_2 + e_1 \tag{4.27}$$

In this equation, $\rho_1 = E(v_2 u_1)/E(v_2^2), E(v_2 e_1) = 0$, and $E(\mathbf{z}'e_1) = 0$[38]. In that manner, y_2 is exogenous if and only if $\rho_1 = 0$. One can get the following equation by plugging equation (4.27) into the equation (4.24):

$$y_1 = \mathbf{z}_1\delta_1 + \alpha_1 y_2 + \rho_1 v_2 + e_1 \tag{4.28}$$

The important thing in here is that e_1 is uncorrelated with $\mathbf{z}_1, y_2$ and v_2 by construction. Hence a test of $H_0 : \rho_1 = 0$ can be done using a standard *t* test on the variable v_2 in an OLS regression that includes $\mathbf{z}_1$ and y_2. There is a problem that v_2 is not observed. Nonetheless, the reduced form parameters $\boldsymbol{\pi}_2$ are easily

[37] In this equation, $\boldsymbol{\pi}_2$ is $1 \times L$.

[38] u_1 and v_2 are each orthogonal to **z**.

estimated by OLS. If v_2 denotes the OLS residuals from the first-stage reduced form regression of y_2 on $\mathbf{z}$[39], replacing v_2 with $\hat{v}_2$ one will get the following equation:

$$y_1 = \mathbf{z}_1\delta_1 + \alpha_1 y_2 + \rho_1 \hat{v}_2 + error \tag{4.29}$$

Therefore by using OLS, δ_1, α_1 and ρ_1 can be consistently estimated. Provided the homoskedasticity assumption $E(u_1^2|\mathbf{z},y_2) = \sigma_1^2$ is satisfied under H_0[40], the usual OLS *t* statistic for $\hat{\rho}_1$ is a valid test of $H_0 : \rho_1 = 0$. If heteroskedasticity is suspected under H_0, then a heteroskedasticity-robust t statistic can be used (Wooldridge, 2002: 118-120).

[39] **z** contains all exogenous variables.

[40] y_2 is exogenous under H_0.

CHAPTER 5

DATA SOURCE AND THE VARIABLES

5.1. Data Source

The primary data used in this study is extracted mostly from Turkish Statistical Institute (TURKSTAT). Only the 1975-1985 Gross Domestic Product (GDP) per capita data to calculate the Gross Provincial Product (GPP) per capita are taken from Karaca (2004).

This study represents the 67 provinces , 26 regions (Nuts Level 2 Statistical Regions) and 12 regions (Nuts Level 1 Statistical Regions) of Turkey and the relevant data (unemployment rate, net migration rate, GPP per capita rate and population density) are adjusted according to 67 provinces. The series of the data used for the analysis consist of three periods. The changes in the periods are shown as 1975-1980, 1980-1985 and 1985-1990. Turkey does not have a long tradition of statistical collection. Since there is scarcity of data, I could only use those three periods.

The unemployment rate is taken as the dependent variable. Unemployment rate is defined as the number of unemployed people per 100 people in labor force, which means, it is the proportion of the unemployed population to the population in labor force (TURKSTAT, 2003). Unemployment rate data are taken from "TURKSTAT provincial indicators, 1980-2003".

TURKSTAT provincial indicators, 1980-2003 is prepared in order to demonstrate the diversities in the development of provinces. In this study, selected indicators have been calculated under the topics of population, education, health, national accounts, labor, manufacturing industry, energy, agriculture, mining, building construction, banking, finance, foreign trade, transportation, communication and infrastructure.

Generally, the presentation of data is for years 1980 to 2003 through the publication (TURKSTAT, 2004).

The factors believed to be the determinants of unemployment in Turkey are discussed in Chapter 3, including rural-urban migration and GDP. Based on the studies of Başol (1995) and Karaali and Ülengin (2005), I use the net migration rates and GPP per capita as the independent variables. There are some other reasons for unemployment given by the authors, but since there is scarcity of data, I was able to use only two of those factors that are believed to be the main causes of unemployment.

Net migration rate is an independent variable in my study and the data are extracted from TURKSTAT (2005), "Census of Population 2000, Migration Statistics". The publication presents information on the size and flow of internal migration and immigration. It also includes detailed information on social economic characteristics of migrated population and reason for migration for migrated people. The information about reasons of migration was collected first in 2000 population census. In addition, the publication contains interpretation of changes in the size and flow of migration and characteristics of migrated population for the period 1975-2000 (TURKSTAT, 2005).

Migration statistics have been collected by population censuses. Until the year 2000, 14 population censuses were carried out. The first population census after the declaration of The Republic was carried out in 1927 and the second was in 1935. The population censuses that had been carried out from this year to 1990 are quinquennially. After the year 1990 it has been started to be carried out decennially. On 22nd October 2000, the fourteenth population census was carried out. However, information related to the migration was collected only in 1980, 1985, 1990 and 2000 population censuses (TURKSTAT, 2003 and 2005). Since the censuses between the years 1975 and 1990 are carried out in every five years, the only data that can be obtained for the net migration rates are quinquennially.

According to the definition of TURKSTAT, if a person's place of permanent residence on the census day is different from the place of permanent residence five years ago, than the person is defined as migrant. In addition, migrant population covers the population 5 years of age and over. For a specific area, net migration rate is the difference between in-migration and out-migration. If in-migration is higher than out-migration, net migration is positive, and if out-migration is higher than in-migration, than net migration is negative. Net migration rate is the number of net migration per thousand people who are able to migrate (TURKSTAT, 2005). Net migration rate is calculated as follows:

$$m_{(.i-i.)} = [(M_{.i} - M_{i.}) / P_{i,t+n} - 0.5_{(M.i-Mi.)}] \times k$$

Where;

$m_{(.i-i.)}$: Net migration rate

$M_{.i}$: In-migration

$M_{i.}$: Out-migration

$M_{.i} - M_{i.}$: Net migration

$P_{i,t+n}$: Population residing in "i" at the time "t+n"

i : The place in which migration is defined

k : Constant (k=1000) , (TURKSTAT, 2005)

Another independent variable in the model is GPP per capita. The GPP per capita data are obtained using GDP 1975, 1980 and 1985 data obtained from Karaca (2004). In his study, Karaca adjusted the data, which was taken from Özötün (1980 and 1988), according to the 1987 prices and by provinces. He also adapted these series to TURKSTAT National Income series. The 1990 series for GDP per capita are

extracted from TURKSTAT website[41]. This set of GPP per capita is also used in the study of Saraçoğlu and Kırdar (2007).

The data of population density, which is the instrumental variable in the model, is taken from "TURKSTAT 2000 Census of Population, Social and Economic Characteristics of Population". It is defined as follows:

Population density is population per one square kilometer. In TURKSTAT (2000a), the surface area for year 2000 calculated according to 1/1,000,000 scaled map provided from the General Command of Mapping.
Date of Print: 1998
Scale: 1/1,000,000
Projection Method: Lambert Conformal Conic
Parameters: Standard Parallels 37 30 00
40 30 00
Central Meridian 36 00 00
Surface area of Turkey is 783,562 km2 including lakes and dams (TURKSTAT, 2000a).

5.2. The Variables

The linearly formed Two Stage Least Square (2SLS) equations are as follows:

$$UN_{it} = \gamma_0 + \gamma_1 NM_{it} + \gamma_2 GPP_{it} + u_{it} \quad (1)$$

$$NM_{it} = \delta_0 + \delta_1 GPP_{it} + \delta_2 PD_{it} + v_{it} \quad (2)$$

Here equation (1) is the structural equation in which unemployment is defined as a function of net migration rate and log values of Gross Provincial Product per capita

[41] The data can be reached from "www.tuik.gov.tr/PreIstatistikTablo.do?istab_id=533"

(GPP) which is an exogenous variable. Equation (2) is the first stage of the 2SLS estimation; net migration equation includes GPP and log values of Population Densities of 67 provinces (PD) which is an instrument.

The dependent variable in the model is the unemployment rate (*UN*). As mentioned above, it shows us the unemployment rates of the provinces in the years 1980, 1985 and1990.

The first independent variable is net migration rate (*NM*) and it is calculation has given before. An increase in net migration rates may increase the unemployment rates because as migration increases, the demand for employment creation in the place of destination couldn't be met and the number of unemployed increased. Generally, the employment opportunities in the cities of Turkey are not even sufficient for the cities local unemployed people. Therefore, we expect a positive relationship between net migration rate and the change in unemployment rate.

The second independent variable is the log values of GPP per capita (*GPP*) in our model. As mentioned before in Chapter 3, Karaali and Ülengin (2005) pointed out in their study that, one of the factors believed to be the basic causes of unemployment in Turkey is GDP. As an increase in the GDP per capita leads to a decrease in the unemployment rate, the log values of GPP is included in the model with a negative sign expectation.

The log values of Population Density (PD) for 67 provinces of Turkey are the instrumental variable in this study. The reason that I chose it for instrumental variable is; population density is a measure of the previous migration movements and a good indicator of the general attractiveness of the region (Kırdar and Saraçoğlu, 2007).

The variables in our model are summarized by their definitions and expected signs in the following table:

Table 5.1: The Variables for the Equations

Variables	Definition of Variable	Expected Sign
$UN_{i,t}$	**The Unemployment Rate (Dependent Variable)** The unemployment rates for the 67 provinces of Turkey for period t.	
NMi,t	**Net Migration Rate (Independent Variable)** The net migration rates for the 67 provinces of Turkey for period t.	positive
GPPi,t	**TheGross Provincial Product per capita (Independent Variable)** The log values of GPP per capita rates for the 67 provinces of Turkey for period t.	negative
PDi,t	**Population Density (Instrumental Variable)** The log values of population densities for the 67 provinces of Turkey for period t.	

The descriptive statistics for the variables is given in the Table 5.2 and the correlations between these variables are reported in Table 5.3. According to the Table 5.2 we could say that, between the years 1975 and 1990, the lowest log value GPP per capita rates was in Hakkari (12.55) 1990 and the highest was in Kocaeli (15,19) in the year 1990. The net migration and the unemployment rates were considered in Chapter 3.

Table 5.2: Main Statistics Related to the Variables

Variable	Mean	Std. Dev.	Min	Max
UN	4.104328	1.867198	1.4	11.5
NM	-1.990667	4.139374	-15.17	10.02
GPP	13.64765	0.4683631	12.55	15.19
PD	4.038221	0.6582778	2.77	7.15

Table 5.3: The Correlation Matrix

	UN	NM	GPP
UN	1.0000		
NM	0.1040	1.0000	
GPP	0.0881	0.0881	1.0000

CHAPTER 6

ESTIMATION RESULTS

In this chapter, Two Stage Least Square (2SLS) method for a panel of 67 provinces (Nuts Level3) of Turkey, 26 regions of Turkey (Nuts Level2) and 12 regions of Turkey (Nuts Levl1) are applied.

As mentioned before in Chapter 2, there is a two-way causality between net migration and unemployment. Since unemployment rate could also affect net migration rate, there can be an endogeneity problem.

To test for the potential endogeneity of migration rate, I use the Hausman test as explained in Wooldridge (2002). This method has been also used by Kırdar and Saraçoğlu (2007).

In order to check for the existence of endogenity, firstly reduced form equation (equation (2) below) is estimated on the covariates in the structural equation to get the fitted values of the residuals v, that is $\hat{v}$. Thereafter, fitted residuals are included to the structural equation in order to test the significance of the fitted residuals from the reduced-form regression by using OLS. If the fitted values are found significant, that is $\hat{v}$ is correlated with the error term, u, in the structural equation, it tells us that there is endogeneity of migration rate and unemployment. According the estimation results $\hat{v}$ is found statistically significant from zero with a t statistics of and the p value is 0.000. Therefore, I found evidence for the endogeneity which makes the OLS estimates biased.

In order to overcome this problem I used instrumental variables regression techniques. This procedure is based on finding instruments that are correlated with the endogenous variable which is the net migration rate, but should be uncorrelated with the dependent variable which is the unemployment rate. The instrument employed in this study is the log values of the population density for 67 provinces of Turkey. Population density is a measure of the previous migration movements and a good indicator of the general attractiveness of the region (Kırdar and Saraçoğlu, 2007).

When deciding whether to use a fixed or a random effect model, I used Hausman specification test. The test result favors the use of random effect model with the probability of 0.3216. Therefore I applied the random effect model throughout my study.

Estimations are carried out by using Two Stage Least Square (2SLS) estimation method.

$$UN_{it} = \gamma_0 + \gamma_1 NM_{it} + \gamma_2 GPP_{it} + u_{it} \quad (6.1)$$

$$NM_{it} = \delta_0 + \delta_1 GPP_{it} + \delta_2 PD_{it} + v_{it} \quad (6.2)$$

Here equation (6.1) is the structural equation in which unemployment is defined as a function of net migration rate and log values of Gross Provincial Product per capita (GPP) which is an exogenous variable. Equation (6.2) is the first stage of the 2SLS estimation; net migration equation includes GPP and log values of Population Densities of 67 provinces (PD) which is an instrument.

6.1. Results

The estimation results of the first stage regression are given in Table 6.1. And second stage regression is given Table 6.2.

Table 6.1: First-Stage 2SLS Estimation Results for 67 Provinces

Variables	Coefficients
GPP	5.457703[a] (0.4864485)
PD	1.421894[a] (0.3461069)
constant	-82.21739[a] (5.970178)

Notes: (1) The numbers in the parenthesis denotes robust standard errors.
(2) "a" denotes significant at 1% level, "b" denotes significant at 5% level, c denotes significant at 10% level.

Table 6.2: Second-Stage 2SLS Estimation Results for 67 Provinces

Variables	Coefficients
NM	0.89236[a] (0.2754457)
GPP	-5.520496[a] (1.868757)
constant	-81.2225[a] (26.03713)

Notes: (1) The numbers in the parenthesis denotes robust standard errors.
(2) "a" denotes significant at 1% level, "b" denotes significant at 5% level, c denotes significant at 10% level.

According to the Table 6.2, the net migration rate (NM) is found to be statistically significant with a positive sign as we expected. It indicates that an increase in the net migration rate decreases the unemployment rate. The log values of GPP are found to be statistically significant with a negative sign as expected. That is an increase in the GPP decreases the unemployment rate (UN) in the context of this model.

In order to examine whether rural - urban migration has an effect on increasing the unemployment rates of the provinces with positive net migration rates, I employ the same 2SLS technique for the provinces with positive net migration rates only.

Table 6.3: First-Stage 2SLS Estimation Results for the Provinces with Positive Net Migration Rate for 67 Provinces

Variables	Coefficients
GPP	4.409051[a] (1.063889)
PD	1.097123[a] (0.4992675)
constant	-64.56878[a] (13.9749)

Notes: (1) The numbers in the parenthesis denotes robust standard errors.
(2) "a" denotes significant at 1% level, "b" denotes significant at 5% level, c denotes significant at 10% level.

Table 6.4: Second-Stage 2SLS Estimation Results for the Provinces with Positive Net Migration Rate for 67 Provinces

Variables	Coefficients
NM	1.029596[a] (0.6226915)
GPP	-3.530884 (3.724393)
constant	-51.66036 (51.06167)

Notes: (1) The numbers in the parenthesis denotes robust standard errors.
(2) "a" denotes significant at 1% level, "b" denotes significant at 5% level, c denotes significant at 10% level.

As shown in Table 6.4, the net migration rate is found to be statistically significant and there is a positive relation between the net migration rates and the unemployment rates. That is an increase in the net migration rate increases the unemployment rates of the provinces which have positive net migration rates.

What is different in this observation from the previous one is that, the log values of gross provincial product per capita have not found statistically significant. This shows us that, when the provinces with positive net migration rates are taken into account, there is no relationship between the log values of Gross Provincial Product per capita (GPP) and the net migration rate in the context of our model.

Tables 6.5 and 6.6 shows the first and second estimation results of the 2SLS model where provincial dummy (migd1) is added up to the model. Migd1 shows us the provinces with the positive net migration rates[42].

Table 6.5: First-Stage 2SLS Estimation Results with the Provincial Dummy (migd1) for Nuts Level 3 Statistical Regions

Variables	Coefficients
GPP	3.557383[a] (0.5157647)
PD	1.112106[a] (0.3142036)
Migd1	3.481271[a] (0.5014576)
Constant	-55.98409[a] (6.562121)

Notes: (1) The numbers in the parenthesis denotes robust standard errors.
(2) "a" denotes significant at 1% level, "b" denotes significant at 5% level, c denotes significant at 10% level.

[42] Migd1 takes 1 for the provinces with positive net migration rates and 0 otherwise.

Table 6.6: Second-Stage 2SLS Estimation Results with the Provincial Dummy (migd1) for Nuts Level 3 Statistical Regions

Variables	Coefficients
NM	1.119374[a] (0.3910534)
GPP	-4.779398[a] (1.797444)
Migd1	-3.627378b (1.613515)
Constant	72.55273[a] (25.59063)

Notes: (1) The numbers in the parenthesis denotes robust standard errors.
(2) "a" denotes significant at 1% level, "b" denotes significant at 5% level, c denotes significant at 10% level.

According to Table 6.6, net migration rates (NM) is found to be statistically significant with a positive sign and GPP is found to be statistically significant with a negative sign. This means an increase in net migration rates increases the unemployment rates and an increase in gross provincial product per capita decreases the unemployment rates. In addition to those the dummy representing the provinces with positive net migration rates (migd1) is found to be statistically significant with a negative sign which means the unemployment rates are lower in the provinces with positive net migration rates than the provinces with negative net migration rates. We can conclude by that finding that the provinces with lower unemployment rates are attracting migrants more than the other provinces.

Table 6.7: First-Stage 2SLS Estimation Results with the Regional Dummy for Nuts Level 1 Statistical Regions

Variables	Coefficients
GPP	2.910036[a]
	(0.6306986)
PD	1.797261[a]
	(0.3756118)
nuts1d2	-0.7076878
	(1.761751)
nuts1d3	0.3454996
	(1.688701)
nuts1d4	1.186819
	(1.678196)
nuts1d5	-0.0548258
	(1.872815)
nuts1d6	0.7770073
	(1.70125)
nuts1d7	-1.845222
	(1.814144)
nuts1d8	-2.82005
	(1.715913)
nuts1d9	-4.522467[a]
	(1.727643)
nuts1d10	-4.393006[b]
	(1.932526)
nuts1d11	-1.956116
	(1.871324)
nuts1d12	-1.471563
	(1.768251)
Constant	-47.60323[a]
	(8.568334)

Notes: (1) The numbers in the parenthesis denotes robust standard errors.
(2) "a" denotes significant at 1% level, "b" denotes significant at 5% level, c denotes significant at 10% level.

Table 6.8: Second-Stage 2SLS Estimation Results with the Regional Dummy for Nuts Level 1 Statistical Regions

Variables	Coefficients
NM	0.7295503[a]
	(0.2149082)
GPP	-0.9805834
	(1.074566)
nuts1d2	1.366843
	(1.898116)
nuts1d3	0.9849809
	(1.700004)
nuts1d4	0.8308959
	(1.612446)
nuts1d5	3.872317 [b]
	(1.931224)
nuts1d6	2.859115 [c]
	(1.673865)
nuts1d7	4.580637 [b]
	(2.096754)
nuts1d8	4.031241 [c]
	(2.113402)
nuts1d9	5.486691 [b]
	(2.342663)
nuts1d10	6.633922 [b]
	(2.564187)
nuts1d11	6.186793 [a]
	(2.153902)
nuts1d12	6.324501 [a]
	(1.968721)
Constant	15.1469
	(14.47745)

Notes: (1) The numbers in the parenthesis denotes robust standard errors.
(2) "a" denotes significant at 1% level, "b" denotes significant at 5% level, c denotes significant at 10% level.

Tables 6.7 and 6.8[43] show the estimation results with regional dummies for Nuts Level 1[44]. According to Table 6.8, net migration rates is found to be statistically

[43] In those tables nuts1d1 shows İstanbul, nuts1d2 shows West Marmara, nuts1d3 shows Agean, nuts1d4 shows East Marmara, nuts1d5 shows West Anatolia, nuts1d6 shows Mediterranean, nuts1d7

significant with the coefficient 0.72 and log values of gross provincial per capita is found to be statistically significant with the coefficient -0.98. This means one unit increase in net migration rates increases the unemployment rates by 0.72 units and one unit increase in log values of gross provincial per capita decreases the unemployment rates by 0.9 units. In addition to those, West Anatolia, Mediterranean, Central Anatolia, West Black Sea, East Black Sea, North East Anatolia, Central East Anatolia and South East Anatolia Regions are found to be statistically significant with positive signs which means that when we compare those regions with the İstanbul Region, the unemployment rates in those regions are higher than the unemployment rates in İstanbul Region. The remaining regions are found to be statistically insignificant.

shows central Anatolia, nuts1d8 shows West Black Sea, nuts1d9 shows East Black Sea, nuts1d10 shows North East Anatolia, nuts1d11 shows Central East Anatolia and nuts1d12 shows South East Anatolia Regions.

[44] Nuts1d1 which shows İstanbul Region is excluded from the regression due to comparason.

Table 6.9: First-Stage 2SLS Estimation Results with the Regional Dummy for Nuts Level 2 Statistical Regions

Variables	Coefficients	Variables	Coefficients
GPP	2.697203 [a] (0.7566076)	nuts2d14	-1.015691 (2.002636)
PD	2.109922[a] (0.4631364)	nuts2d15	-1.105467 (2.056061)
nuts2d2	-0.0221341 (1.926044)	nuts2d16	-3.184593 (1.996526)
nuts2d3	0.2575375 (2.016342)	nuts2d17	-1.796418 (2.052758)
nuts2d4	1.851884 (1.959997)	nuts2d18	-2.160982 (1.857291)
nuts2d5	1.648143 (1.915809)	nuts2d19	-3.933832 [b] (1.832219)
nuts2d6	0.4322612 (1.900624)	nuts2d20	-2.775577 (2.194838)
nuts2d7	2.287709 (1.921819)	nuts2d21	-4.495385 [b] (2.216774)
nuts2d8	1.500598 (1.767318)	nuts2d22	-2.868598 (2.048657)
nuts2d9	0.3509359 (2.048222)	nuts2d23	0.4470401 (2.148851)
nuts2d10	0.970128 (2.283447)	nuts2d24	-0.518966 1.954944
nuts2d11	1.936145 (2.017646)	nuts2d25	-0.5505352 (2.059024)
nuts2d12	2.651123 (1.906886)	nuts2d26	-1.506111 (2.081828)
nuts2d13	-0.3799807 (1.887168)	Constant	-46.65651 [a] (10.24122)

Notes: (1) The numbers in the parenthesis denotes robust standard errors.
(2) "a" denotes significant at 1% level, "b" denotes significant at 5% level, c denotes significant at 10% level.

Table 6.10: Second-Stage 2SLS Estimation Results with the Regional Dummy for Nuts Level 2 Statistical Regions

Variables	Coefficients	Variables	Coefficients
NM	0.5269422 [a] (0.1868661)	nuts2d14	2.177965 (1.822991)
GPP	-0.5736676 (0.9696276)	nuts2d15	3.468277 [c] (1.873222)
nuts2d2	0.1963833 (1.642181)	nuts2d16	4.253299 [b] (2.003093)
nuts2d3	-0.164112 (1.688472)	nuts2d17	1.621296 (1.960338)
nuts2d4	-0.0380203 (1.572311)	nuts2d18	2.186434 (1.811456)
nuts2d5	-0.74316 (1.47228)	nuts2d19	3.370034 [c] (2.015773)
nuts2d6	0.4103653 (1.572246)	nuts2d20	3.610799 (2.206144)
nuts2d7	0.249863 (1.415095)	nuts2d21	4.803246 [b] (2.383387)
nuts2d8	-0.143753 (1.379955)	nuts2d22	5.451174 [a] (2.091136)
nuts2d9	3.532804 [b] (1.71673)	nuts2d23	3.074532 [c] (1.789537)
nuts2d10	1.912292 (1.851369)	nuts2d24	3.679797 [b] (1.703759)
nuts2d11	0.3039827 (1.517902)	nuts2d25	5.657326 [a] (1.804441)
nuts2d12	3.340332 [b] (1.421451)	nuts2d26	4.894676 [b] (1.921537)
nuts2d13	2.71122 [c] (1.635093)	Constant	-10.70147 (13.15392)

Notes: (1) The numbers in the parenthesis denotes robust standard errors.
(2) "a" denotes significant at 1% level, "b" denotes significant at 5% level, c denotes significant at 10% level.

In Tables 6.9 and 6.10[45] the estimation results with regional dummies for Nuts Level 2 are given[46].

According to Table 6.12, net migration rates is found to be statistically significant with the coefficient 0.52 which shows a positive relationship between net migration rates and the unemployment rates and log values of gross provincial per capita is found to be statistically insignificant. In addition to those, the following 12 regions are found to be statistically significant with positive signs which means that when we compare those regions with the İstanbul Region, the unemployment rates in those regions are higher than the unemployment rates in İstanbul Region: Ankara; Adana, Mersin; Hatay, K.Maraş, Osmaniye; Kayseri, Sivas, Yozgat; Zonguldak, Karabük, Bartın; Trabzon, Ordu, Giresun, Rize, Artvin, Gümüşhane; Ağrı, Kars, Iğdır, Ardahan, Malatya, Elazığ, Bingöl, Tunceli; Van, Muş, Bitlis, Hakkari; Gaziantep, Adıyaman, Kilis; Şanlıurfa, Diyarbakır; Mardin, Batman, Şırnak, Siirt Regions. The remaining 14 regions are found to be statistically insignificant.

[45] In those tables nuts2d1 shows İstanbul, nuts2d2 shows Tekirdağ, Edirne, Kırklareli, nuts2d3 shows Balıkesir, Çanakkale, nuts2d4 shows İzmir, nuts2d5 shows Aydın, Denizli, Muğla, nuts2d6 shows Manisa, Afyonkarahisar, Kütahya, Uşak, nuts2d7 shows Bursa, Eskişehir, Bilecik, nuts2d8 shows Kocaeli, Sakarya, Düzce, Bolu, nuts2d9 shows Ankara, nuts2d10 shows Konya, Karaman, nuts2d11 shows Antalya, İsparta, Burdur, nuts2d12 shows Adana, Mersin, nuts2d13 shows Hatay, K.Maraş, Osmaniye, nuts2d14 shows Kırıkkale, Aksaray, Niğde, Nevşehir, Kırşehir, nuts2d15 shows Kayseri, Sivas, Yozgat, nuts2d16 shows Zonguldak, Karabük, Bartın, nuts2d17 shows Kastamonu, Çankırı, Sinop, nuts2d18 shows Samsun, Tokat, Çorum, Amasya, nuts2d19 shows Trabzon, Ordu, Giresun, Rize, Artvin, Gümüşhane, nuts2d20 shows Erzurum, Erzincan, Bayburt, nuts2d21 shows Ağrı, Kars, Iğdır, Ardahan, nuts2d22 shows Malatya, Elazığ, Bingöl, Tunceli, nuts2d23 shows Van, Muş, Bitlis, Hakkari, nuts2d24 shows Gaziantep, Adıyaman, Kilis, nuts2d25 shows Şanlıurfa, Diyarbakır, nuts2d26 shows Mardin, Batman, Şırnak, Siirt Regions.

[46] Nuts2d1 which shows İstanbul Region is excluded from the regression due to comparason.

Table 6.11: First-Stage 2SLS Estimation Results with the Regional and Provincial Dummy for Nuts Level 2 Statistical Regions

Variables	Coefficients	Variables	Coefficients
GPP	2.138613 a (0.7349731)	nuts2d13	-0.2549268 (1.803064)
PD	1.722206 a (0.4520022)	nuts2d14	-0.335441 (1.919995)
migd1	2.447209 a (0.5838676)	nuts2d15	-0.9042857 (1.964747)
nuts2d2	0.1816042 (1.840597)	nuts2d16	-2.591408 (1.91253)
nuts2d3	0.4000617 (1.926517)	nuts2d17	-1.279635 (1.964878)
nuts2d4	1.129749 (1.8803)	nuts2d18	-1.379033 (1.784057)
nuts2d5	0.4227068 (1.853383)	nuts2d19	-3.200045 c (1.759057)
nuts2d6	0.0481409 (1.817983)	nuts2d20	-2.431254 (2.098343)
nuts2d7	1.17766 (1.854923)	nuts2d21	-4.325041 b (2.118079)
nuts2d8	1.200883 (1.689837)	nuts2d22	-2.468996 (1.959408)
nuts2d9	-0.8214096 (1.976563)	nuts2d23	0.5733498 (2.053025)
nuts2d10	1.64821 (2.187374)	nuts2d24	0.2377757 (1.87627)
nuts2d11	1.876013 (1.927516)	nuts2d25	0.0039015 (1.971434)
nuts2d12	1.375893 (1.846886)	nuts2d26	-1.01409 (1.992237)
		Constant	-38.23874 a (9.987476)

Notes: (1) The numbers in the parenthesis denotes robust standard errors.
(2) "a" denotes significant at 1% level, "b" denotes significant at 5% level, c denotes significant at 10% level.

Table 6.12: Second-Stage 2SLS Estimation Results with the Regional and Provincial Dummy for Nuts Level 2 Statistical Regions

Variables	Coefficients	Variables	Coefficients
NM	0.6571855 a (0.2566439)	nuts2d13	2.672075 (1.788488)
GPP	-0.5290456 (1.051567)	nuts2d14	1.828108 (1.926715)
migd1	-1.734521 c (0.9312374)	nuts2d15	3.469664 c (2.055812)
nuts2d2	0.0548614 (1.772751)	nuts2d16	4.247637 c (2.196767)
nuts2d3	-0.2986722 (1.826638)	nuts2d17	1.488984 (2.119912)
nuts2d4	0.2326157 (1.748217)	nuts2d18	1.913661 (1.929865)
nuts2d5	-0.0892608 (1.749712)	nuts2d19	3.3623 (2.209919)
nuts2d6	0.6263211 (1.77058)	nuts2d20	3.728251 (2.451368)
nuts2d7	0.7386792 (1.642743)	nuts2d21	5.268004 c (2.740425)
nuts2d8	-0.1267655 (1.516446)	nuts2d22	5.541562 b (2.318142)
nuts2d9	4.318026 b (2.034826)	nuts2d23	2.926783 (1.941139)
nuts2d10	1.305331 (1.954139)	nuts2d24	3.211029 c (1.814058)
nuts2d11	0.0944329 (1.634261)	nuts2d25	5.336058 a (1.927327)
nuts2d12	3.898892 b (1.638523)	nuts2d26	4.742105 b (2.078369)
		Constant	10.81186 (14.4635)

Notes: (1) The numbers in the parenthesis denotes robust standard errors.
(2) "a" denotes significant at 1% level, "b" denotes significant at 5% level, c denotes significant at 10% level.

I run the regression again by adding up the migd1 and Tables 6.11 and 6.12 shows the estimation results with regional dummies for Nuts Level 2. This time Ankara; Adana, Mersin; Kayseri, Sivas, Yozgat, Zonguldak, Karabük, Bartın; Ağrı, Kars,

Iğdır, Ardahan; Malatya, Elazığ, Bingöl, Tunceli; Gaziantep, Adıyaman, Kilis; Şanlıurfa, Diyarbakır; and Mardin, Batman, Şırnak, Siirt Regions are found to be statistically significant with positive signs, meaning when we compare those regions with the İstanbul Region, the unemployment rates in those regions are higher than the unemployment rates in İstanbul Region. According to Table 6.14, the net migration rates is again found to be statistically significant with the coefficient 0.65. This means one unit increase in net migration rates increases the unemployment rates by 0.65 units. The migd1 is found to be statistically significant with a negative sign (coefficient is 1.73) which means provinces with lower unemployment rates are attracting migrants more than the other provinces and finally log values of gross provincial per capita is found to be statistically insignificant.

Table 6.13: First-Stage 2SLS Estimation Results with the Regional and Provincial Dummy for Nuts Level 1 Statistical Regions

Variables	Coefficients
GPP	2.198811 [a] (0.6189369)
PD	1.435917 [a] (0.3654571)
migd1	2.443717 [a] (0.5317127)
nuts1d2	-0.5393789 (1.674386)
nuts1d3	-0.4287621 (1.613394)
nuts1d4	0.4799782 (1.601992)
nuts1d5	-0.3389368 (1.78059)
nuts1d6	0.3737614 (1.618877)
nuts1d7	-1.48859 (1.725514)
nuts1d8	-2.248675 (1.635163)
nuts1d9	-3.903564 [b] (1.64709)
nuts1d10	-4.280034 [b] (1.836417)
nuts1d11	-1.840104 (1.778278)
nuts1d12	-1.000103 (1.68329)
Constant	-37.13078 [a] (8.454341)

Notes: (1) The numbers in the parenthesis denotes robust standard errors.
(2) "a" denotes significant at 1% level, "b" denotes significant at 5% level, c denotes significant at 10% level.

Table 6.14: Second-Stage 2SLS Estimation Results with the Regional and Provincial Dummy for Nuts Level 1 Statistical Regions

Variables	Coefficients
NM	0.8691789 [a] (0.3022382)
GPP	-0.8929708 (1.148852)
migd1	-1.697133 (1.069981)
nuts1d2	1.348768 (2.078247)
nuts1d3	1.474455 (1.985883)
nuts1d4	1.156074 (1.832673)
nuts1d5	4.077284 [c] (2.162653)
nuts1d6	3.030672 (1.869712)
nuts1d7	4.590607 [b] (2.303505)
nuts1d8	4.028187 [c] (2.31816)
nuts1d9	5.688336 [b] (2.634608)
nuts1d10	7.168854 [b] (2.993312)
nuts1d11	6.379354 [a] (2.416301)
nuts1d12	6.20255 [a] (2.133604)
Constant	14.52069 (15.677)

Notes: (1) The numbers in the parenthesis denotes robust standard errors.
(2) "a" denotes significant at 1% level, "b" denotes significant at 5% level, c denotes significant at 10% level.

This time I run the regression again by adding up the migd1 and Tables 6.13 and 6.14 shows the estimation results with regional dummies for Nuts Level 1. According to Table 6.14, the net migration rates are again found to be statistically significant with the coefficient 0.86. This means one unit increase in net migration rates increases the unemployment rates by 0.86 units. The migd1 and log values of gross provincial per capita are found to be statistically insignificant for this regression. Furthermore, West Anatolia, Central Anatolia, West Black Sea, East Black Sea, North East Anatolia, Central East Anatolia and South East Anatolia Regions are found to be statistically significant with positive signs, meaning when we compare those regions with the İstanbul Region, the unemployment rates in those regions are higher than in İstanbul Region. The rest of the regions are found to be statistically insignificant.

Table 6.15: First-Stage 2SLS Estimation Results with the Regional Dummy for the Regions with Positive Net Migration Rates for Nuts Level 1 Statistical Regions

Variables	Coefficients
GPP	3.567509 [a] (0.5441307)
PD	1.500653 [a] (0.3184936)
regiondum	2.793035 [a] (0.4578968)
Constant	-57.80871 [a] (6.793074)

Notes: (1) The numbers in the parenthesis denotes robust standard errors.
(2) "a" denotes significant at 1% level, "b" denotes significant at 5% level, c denotes significant at 10% level.

Table 6.16: Second-Stage 2SLS Estimation Results with the Regional Dummy for the Regions with Positive Net Migration Rates for Nuts Level 1 Statistical Regions

Variables	Coefficients
NM	0.8431909 [a] (0.2390019)
GPP	-3.574239 [a] (1.268259)
regiondum	-2.479349 [a] 0.8267939
Constant	55.5126 [a] (17.91855)

Notes: (1) The numbers in the parenthesis denotes robust standard errors.
(2) "a" denotes significant at 1% level, "b" denotes significant at 5% level, c denotes significant at 10% level.

In this regression I included a dummy which takes 1 for the regions with positive net migration rates and 0 otherwise (regiondum). Tables 6.15 and 6.16 shows the first and second stage estimation results for this 2LS model. It is found that the net migration rates is statistically significant with a coefficient 0.84 and a positive sign. A one unit decrease in net migration rates decreases the unemployment rates by 0.84 units. The log values of the gross provincial per capita values is found to be statistically significant with a negative sign as we expected. What is different in here is that we have region dummy and it is found to be statistically significant with a negative sign, which means that the unemployment rates are lower in the regions with positive net migration rates than the regions with negative net migration rates. We can conclude by that finding that the regions having lower unemployment rates are attracting migrants more than the other regions.

Based on our findings, we could say that the theories of the rural–urban migration suggested by Todaro (1969), which was extended by Harris and Todaro (1970) is consistent with the Turkey case. Some similar findings were given in Chapter 2.

CHAPTER 7

CONCLUSION

Unemployment is one of the important problems that every developing country and Turkey deals with for so many years. Unemployment has serious negative effects on economies. It varies widely over time, between economies. One of the few fixed points in the macro evidence is that high unemployment accompanies low output.

Migration, especially internal migration, nourishes unemployment. Migrants might reduce the job prospects of the residents of urban through their adverse effect on the search efficiency of indigenous workers. Migration can cause unemployment; either directly through the number of new immigrants that are unable to find jobs, or indirectly if migrants displace workers from their existing jobs. Depending on their relative ability to find jobs, migrants may provide strong competition to native workers and causes a rise in unemployment ratio.

People migrate from rural to urban areas (from east to west) in search of a job. When people migrate, do they really find a job, or do they contribute to the existing unemployment in the place of destination? Does the unemployment in urban areas really affected from the rural urban migration? How does the unemployment level of Turkey affected from the internal migration?

Turkey is facing the unskilled labor migration from the less developed rural regions to more developed urban regions. The reason for this migration from rural to urban areas is the lack of adequate living and working conditions in rural areas of Turkey. Large population, low productivity and insufficient standard of living in rural areas push the people into the cities with the possibility of finding a new job. However, this population inflow to the urban makes it difficult for the urban governments to

provide employment, housing, basic services, and sanitation living conditions for migrants newly arrived. The cities are generally inadequate to absorb and employ these large volumes of people in satisfactory jobs.

In general, the migration pattern for Turkey is from the east, to the west. There is a big difference between east and west regions of Turkey in terms of income levels, and this regional income distribution disequilibrium in Turkey worsens every year. When the average per capita GDP of Turkey is taken into account, it is observed that GDP per capita of west regions is reasonably higher than the GDP per capita in east regions of Turkey. As a result of this, Turkey faces a huge amount of unskilled labor migration from the less developed rural regions to more developed urban areas. People leave their permanent residence in search of employment in Turkey. As a result of this transition from agriculture to industry, the service sector and the manufacturing sectors ratio are increasing; however the job creating capacity in industry is limited.

I have attempted in this study to explore the connection between rural - urban migration and unemployment in Turkey and examine whether this has an effect on increasing the unemployment rates. In order to see the effect of net migration on unemployment rates in Turkey, I regress the "unemployment rates between the years 1975-1980" data on "1975-1980 net migration rates" data by using Ordinary Least Square (OLS) method. The results suggested that there is a positive relation between net migration rates and the change in unemployment rates for the period 1975-1980. The same results were taken when I investigate the interval of 1980-1985 and 1985-1990, meaning that in those periods, when the net migration rate increases, the unemployment rate increases in Turkey. One possible scenario for the observed positive relationship between the net migration and the unemployment rates could be that, this internal migration process seems to be increasing the unemployment rates between the years 1975 and 1990.

Furthermore to see the effect of internal migration on unemployment rates of the provinces with positive net migration rates, I regressed the unemployment rates for the years 1980, 1985 and 1990 data on "1975-1980, 1980-1985 and 1985-1990 net migration rates" data, for the cities with positive net migration rates. According to the results of these estimations, the coefficient of net migration is statistically significant in the year 1985 but statistically insignificant for the years 1980 and 1990. Unfortunately the observation number is only 18 and this won't give us a healthy result. To make more reliable analyses, 2 SLS panel data techniques used to understand whether an increase in net migration rates increases the unemployment rates or not in those cities with positive net migration rates.

In order to get consistent results, a random-effect 2SLS panel data model using the nuts level 1, nuts level2 and nuts level3 statistical regions data (unemployment rate, net migration rate and GPP per capita rate) obtained from TURKSTAT including the periods 1975-1980, 1980-1985 and 1985-1990 is constructed. But before that, since unemployment rate could also affect net migration rate, there could be an endogeneity problem. To test for the potential endogeneity of migration rate, the Hausman test as explained in Wooldridge (2002) is used and evidence for the endogeneity which makes the OLS estimates biased is found. To overcome this problem, instrumental variables regression techniques were used. The instrument employed in this study is the log values of the population density for 67 provinces of Turkey. In deciding whether to use a fixed or a random effect model, Hausman specification test was employed and the test result favors the use of random effect model.

According to the 2SLS estimation results, it is found that as internal migration increases, unemployment in Turkey also increases for nuts level3 regions. Furthermore, the log values of Gross Provincial Per capita (GPP) has found statistically significant with a negative sign as expected. That is an increase in the GPP decreases the unemployment rate (UN) in the context of this model.

In order to examine whether rural - urban migration has an effect on increasing the unemployment rates of the provinces with positive net migration rates, the same 2SLS technique for the provinces with positive net migration rates was employed. It is found that the net migration rate is found to be statistically significant and there is a positive relation between the net migration rates and the unemployment rates. That is an increase in the net migration rate increases the unemployment rates of the provinces which have positive net migration rates. But, the log values of gross provincial product per capita have not found statistically significant. This shows us that, when the provinces with positive net migration rates are taken into account, there is no relationship between the log values of Gross Provincial Product per capita (GPP) and the net migration rate in the context of our model.

When provincial dummy (migd1) is added up to the model, it is found that net migration rates is found to be statistically significant with a positive sign and GPP is found to be statistically significant with a negative sign. In addition to those the dummy representing the provinces with positive net migration rates (migd1) is found to be statistically significant with a negative sign which means the unemployment rates are lower in the provinces with positive net migration rates than the provinces with negative net migration rates. This means the provinces with lower unemployment rates are attracting migrants more than the other provinces for the years 1975-1990 in the context of this study.

Furthermore, when regional dummies for Nuts Level 1 is added up to the model it is found that, net migration rates was again statistically significant with the coefficient 0.72 and log values of gross provincial per capita is found to be statistically significant with the coefficient -0.98. In addition to those, West Anatolia, Mediterranean, Central Anatolia, West Black Sea, East Black Sea, North East Anatolia, Central East Anatolia and South East Anatolia Regions are found to be statistically significant with positive signs which means that when we compare those regions with the İstanbul Region, the unemployment rates in those regions are higher

than the unemployment rates in İstanbul Region. The remaining regions are found to be statistically insignificant.

Following this estimation, regional dummies for Nuts Level 2 are added to the model. According to the results it can be said that, there is again a positive relationship between net migration rates and the unemployment rates and log values of gross provincial per capita is found to be statistically insignificant. In addition to those, when we compare the following regions with the İstanbul Region, the unemployment rates in those regions are higher than the unemployment rates in İstanbul Region: Ankara; Adana, Mersin; Hatay, K.Maraş, Osmaniye; Kayseri, Sivas, Yozgat; Zonguldak, Karabük, Bartın; Trabzon, Ordu, Giresun, Rize, Artvin, Gümüşhane; Ağrı, Kars, Iğdır, Ardahan, Malatya, Elazığ, Bingöl, Tunceli; Van, Muş, Bitlis, Hakkari; Gaziantep, Adıyaman, Kilis; Şanlıurfa, Diyarbakır; Mardin, Batman, Şırnak, Siirt Regions. The remaining 14 regions are found to be statistically insignificant.

When I run the regression again by adding up the migd1, estimation results with regional dummies for Nuts Level 2 showed that, Ankara; Adana, Mersin; Kayseri, Sivas, Yozgat, Zonguldak, Karabük, Bartın; Ağrı, Kars, Iğdır, Ardahan; Malatya, Elazığ, Bingöl, Tunceli; Gaziantep, Adıyaman, Kilis; Şanlıurfa, Diyarbakır; and Mardin, Batman, Şırnak, Siirt Regions are found to be statistically significant with positive signs, meaning when we compare those regions with the İstanbul Region, the unemployment rates in those regions are higher than the unemployment rates in İstanbul Region. The net migration rates are again found to be statistically significant with the coefficient 0.65 and the migd1 is found to be statistically significant with a negative sign meaning provinces with lower unemployment rates are attracting migrants more than the other provinces and finally the GPP per capita is found to be statistically insignificant.

By running the same regression with migd1 for Nuts Level 1 statistical regions, the net migration rates is again found to be statistically significant with the coefficient

0.86. However the migd1 and log values of gross provincial per capita are found to be statistically insignificant for this regression. Furthermore, West Anatolia, Central Anatolia, West Black Sea, East Black Sea, North East Anatolia, Central East Anatolia and South East Anatolia Regions are found to be statistically significant with positive signs, meaning when we compare those regions with the İstanbul Region, the unemployment rates in those regions are higher than in İstanbul Region. The rest of the regions are found to be statistically insignificant.

Finally by including a dummy which takes 1 for the regions with positive net migration rates and 0 otherwise (regiondum), the regression is run again. It is found that the net migration rates is statistically significant with a positive sign and the GPP per capita values is found to be statistically significant with a negative sign as we expected. What is different in here is that we have region dummy and it is found to be statistically significant with a negative sign, meaning that the unemployment rates are lower in the regions with positive net migration rates than the regions with negative net migration rates. It can be said that, the regions having lower unemployment rates are attracting migrants more than the other regions. As those regions attract migrants and as net migration rates increases, the unemployment rates for the regions that are taking migrants are increasing.

Based on the above findings, one could say that the internal migration has an effect on increasing the unemployment rates in Turkey and the theories of the rural–urban migration suggested by Todaro (1969), which was extended by Harris and Todaro (1970) is consistent with the Turkey case.

A few policy implications can be proposed in the light of the results obtained through this study. One is the migration–restriction policy implementation. Governments can physically control migration from the rural areas to urban. Such controls have recently been introduced in some of developing countries. For example China has been struggling with the potential increase in urban unemployment arises from industrialization for a long time. Their arising migration policy is to strictly control

labor mobility through the household registration system. Although the controls have been relaxed gradually since 1978, many implicit restrictions on rural–urban migration still avoid the boom in urban unemployment.

Another policy can be building a social and economic development program and/or investment plan for the rural and less developed areas to expand employment opportunities, encouraging firms to give high priority for employing the local people in those regions and to constitute modern lifestyle in depressed areas, making rural life more attractive. Thereby push factors could be eliminated and a decrease in rural-urban migration can be achieved.

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APPENDICES

APPENDIX A: SUPPLEMENTARY TABLES FOR CHAPTER THREE

Table A1: Per Capita Gross Domestic Product by 67 Provinces – Turkey, 1975-2001; TL (1987 prices)

Provinces	1975	1980	Percentage change 1975-1980	1985	Percentage change 1980-1985	1990	Percentage change 1985-1990	2000
Adana	1,140,293	1,047,694	-8	1,189,281	14	1,560,276	31	17,100,644,259,335
Adıyaman	379,828	519,946	37	510,187	-2	1,031,153	102	7,884,658,460,795
Afyon	719,703	777,453	8	848,979	9	839,415	-1	1,021,292,880,033,880
Ağrı	371,412	339,747	-9	322,261	-5	290,501	-10	347,879,630,627,290
Amasya	847,007	830,284	-2	800,124	-4	908,243	14	114,810,171,708,886
Ankara	1,279,224	1,309,072	2	1,406,407	7	1,969,987	40	23,147,426,377,865
Antalya	961,475	1,130,964	18	1,128,381	0	1,680,182	49	170,879,352,056,138
Artvin	831,314	818,160	-2	851,712	4	1,528,006	79	1,559,406,755,233,250
Aydın	1,031,370	1,118,874	8	1,335,033	19	1,589,802	19	190,128,835,323,776
Balıkesir	1,143,586	1,156,119	1	1,252,526	8	1,490,506	19	166,238,923,879,016
Bilecik	1,051,102	1,320,059	26	1,681,214	27	2,147,835	28	295,066,112,408,782
Bingöl	379,201	367,080	-3	345,838	-6	342,870	-1	454,700,636,626,597
Bitlis	473,246	368,466	-22	343,936	-7	419,342	22	360,046,964,080,406
Bolu	956,330	939,038	-2	942,057	0	1,429,439	52	206,053,329,305,900
Burdur	1,066,184	1,081,582	1	1,283,131	19	1,168,996	-9	1,619,754,828,929,230
Bursa	1,500,998	1,376,399	-8	1,717,983	25	2,081,793	21	236,016,633,752,058
Çanakkale	1,130,869	1,374,717	22	1,518,045	10	1,848,409	22	218,847,870,584,120
Çankırı	657,453	814,438	24	767,277	-6	826,950	8	897,082,733,821,764
Çorum	655,939	655,014	0	747,456	14	1,040,558	39	1,459,733,666,288,300
Denizli	903,536	1,189,139	32	1,332,135	12	1,543,839	16	213,842,261,827,953
Diyarbakır	710,670	569,264	-20	633,192	11	1,020,389	61	87,793,541,169,375
Edirne	1,109,161	1,248,086	13	1,479,767	19	1,233,016	-17	1,879,827,179,936,160
Elazığ	757,507	1,024,712	35	1,073,772	5	1,310,699	22	1,107,254,170,570,690
Erzincan	669,072	708,304	6	739,777	4	756,576	2	707,751,642,075,738
Erzurum	591,493	549,488	-7	560,129	2	606,861	8	616,078,423,379,223
Eskişehir	1,282,715	1,375,350	7	1,458,495	6	1,545,883	6	201,785,169,037,641
Gaziantep	960,351	773,196	-19	792,539	3	1,319,432	66	138,710,617,793,330
Giresun	723,459	643,109	-11	680,586	6	729,881	7	907,131,091,113,341
Gümüşhane	455,374	455,832	0	551,988	21	480,406	-13	65,573,525,392,211
Hakkari	401,072	362,536	-10	282,847	-22	309,846	10	3,157,592,046,941,450
Hatay	797,360	897,853	13	809,260	-10	1,287,861	59	150,652,615,662,476
İsparta	826,406	931,341	13	1,116,475	20	1,005,941	-10	1,110,238,025,484,920
İçel	1,475,310	1,897,795	29	1,607,724	-15	320,378	-80	30,231,643,428,563
İstanbul	2,581,885	2,052,383	-21	2,383,082	16	6,432,445	170	79,804,064,062,382
İzmir	1,758,873	2,026,945	15	2,217,490	9	7,087,624	220	899,469,016,606,775
Kars	482,973	380,101	-21	477,361	26	423,653	-11	538,805,538,893,063
Kastamonu	756,773	839,994	11	853,014	2	934,838	10	13,543,951,214,397
Kayseri	955,712	818,850	-14	911,957	11	981,171	8	129,566,574,692,392
Kırklareli	1,133,602	1,099,654	-3	1,587,474	44	2,555,248	61	2,804,616,062,420,920
Kırşehir	780,790	788,006	1	863,924	10	945,778	9	1,091,005,797,132,300
Kocaeli	3,016,163	3,315,674	10	3,986,032	20	3,959,755	-1	433,118,585,428,003
Konya	866,212	973,526	12	984,156	1	1,118,785	14	124,712,085,089,458
Kütahya	957,169	1,151,344	20	1,334,995	16	1,161,539	-13	1,314,784,204,353,640
Malatya	673,330	659,677	-2	969,748	47	1,003,809	4	1,103,540,415,815,950
Manisa	1,132,062	1,113,575	-2	1,347,255	21	1,946,667	44	259,738,918,055,512
Kahraman	583,382	778,650	33	737,763	-5	1,631,051	121	154,719,415,313,873
Mardin	568,447	521,090	-8	565,089	8	323,604	-43	302,713,740,908,858
Muğla	901,983	1,184,403	31	1,513,391	28	1,981,075	31	265,103,818,947,774
Muş	532,967	431,790	-19	425,448	-1	390,311	-8	354,134,119,794,788
Nevşehir	852,168	1,050,666	23	1,534,930	46	1,481,267	-3	1,715,863,835,933,830
Niğde	654,154	825,623	26	807,713	-2	861,895	7	1,065,707,664,426,150
Ordu	460,578	604,385	31	570,408	-6	685,666	20	862,627,917,910,938
Rize	973,043	923,659	-5	1,031,216	12	1,180,609	14	1,282,179,571,087,470
Sakarya	1,033,331	1,080,856	5	964,776	-11	1,253,486	30	177,723,924,537,494
Samsun	876,827	899,088	3	943,111	5	1,228,447	30	142,788,155,739,704
Siirt	702,137	571,462	-19	543,129	-5	419,885	-23	640,432,114,545,866
Sinop	550,636	642,790	17	710,204	10	801,824	13	1,038,762,585,377,960
Sivas	567,044	539,633	-5	584,816	8	725,631	24	976,304,779,181,389
Tekirdağ	1,158,491	1,505,719	30	1,733,088	15	891,738	-49	109,111,497,464,137
Tokat	623,970	605,908	-3	628,703	4	1,204,199	92	129,761,875,332,569
Trabzon	685,872	713,904	4	781,403	9	1,086,752	39	1,120,455,507,122,570
Tunceli	543,368	471,692	-13	540,015	14	90,747	-83	615,450,665,308,545
Şanlıurfa	658,573	509,504	-23	675,897	33	4,466,680	561	1,336,126,779,666,470
Uşak	855,799	900,503	5	1,046,937	16	1,062,359	1	123,996,048,376,879
Van	465,415	402,186	-14	362,677	-10	497,080	37	504,151,546,952,171
Yozgat	503,666	587,517	17	644,500	10	633,878	-2	740,973,857,930,815
Zonguldak	1,549,098	1,306,006	-16	1,339,242	3	1,105,764	-17	184,635,534,108,717

Table A2: Ratio of Population by Literacy Rates (%) by 67 provinces – Turkey

Provinces	1975	1980	Percentage change in Literacy rate 1975-1980	1985	Percentage change in Literacy rate 1980-1985	1990	Percentage change in Literacy rate 1985-1990	2000	Percentage change in Literacy rate 1990-2000
Türkiye	**63.62**	**67.48**	**6.07**	**77.45**	**14.77**	**80.49**	**3.93**	**87.32**	**8.49**
Adana	65.50	68.93	5.23	76.71	11.29	79.47	**3.59**	86.71	9.12
Adıyaman	36.41	43.95	20.70	61.9	40.84	67.49	**9.03**	79.89	18.36
Afyon	60.67	66.89	10.24	79.01	18.12	82.49	**4.40**	88.27	7.01
Ağrı	45.96	39.09	-14.94	55.62	42.29	56.31	**1.24**	67.98	20.73
Amasya	62.28	67.52	8.41	77.79	15.21	80.34	**3.28**	87.41	8.80
Ankara	77.48	80.36	3.71	87.22	8.54	88.98	**2.01**	92.92	4.43
Antalya	57.07	71.4	25.11	81	13.45	85.07	**5.02**	92.08	8.24
Artvin	65.01	70.19	7.97	78.65	12.05	80.93	**2.90**	86.84	7.30
Aydın	65.98	70.33	6.59	79.42	12.92	81.57	**2.70**	87.44	7.21
Balıkesir	69.06	72.88	5.54	79.7	9.36	82.55	**3.57**	88.37	7.05
Bilecik	71.30	76.16	6.81	84.02	10.32	86.86	**3.38**	91.56	5.41
Bingöl	46.74	44.55	-4.69	57.73	29.58	61.33	**6.23**	73.62	20.05
Bitlis	36.43	38.04	4.43	54.28	42.69	60.00	**10.54**	72.43	20.71
Bolu	67.39	68.16	1.14	80.75	18.47	83.25	**3.10**	89.54	7.56
Burdur	66.41	72.67	9.43	84.04	15.65	85.57	**1.82**	89.72	4.85
Bursa	70.99	76.5	7.76	83.61	9.29	86.29	**3.20**	91.73	6.30
Çanakkale	69.90	74.69	6.85	81.96	9.73	84.18	**2.71**	89.56	6.39
Çankırı	61.62	63.63	3.27	76.46	20.16	80.81	**5.68**	88.18	9.12
Çorum	53.73	57.84	7.66	72.46	25.28	75.28	**3.89**	83.12	10.41
Denizli	64.30	69.93	8.75	78.91	12.84	82.81	**4.95**	89.57	8.16
Diyarbakır	40.75	41.18	1.05	52.24	26.86	56.26	**7.70**	69.59	23.69
Edirne	72.08	75.8	5.16	83.17	9.72	84.31	**1.37**	89.04	5.61
Elazığ	57.17	57.89	1.26	68.74	18.74	73.52	**6.95**	82.32	11.98
Erzincan	61.33	67.77	10.51	76.33	12.63	80.80	**5.85**	87.19	7.92
Erzurum	52.97	56.65	6.95	69.61	22.88	73.86	**6.11**	83.64	13.24
Eskişehir	76.98	80.52	4.60	87.32	8.45	89.17	**2.12**	92.96	4.25
Gaziantep	54.78	57.42	4.83	70.97	23.60	73.92	**4.15**	83.50	12.97
Giresun	55.62	58.99	6.06	71.61	21.39	75.44	**5.35**	83.36	10.49
Gümüşhan	57.64	62.12	7.77	74.41	19.78	78.57	**5.59**	86.41	9.98
Hakkari	26.01	31.62	21.55	45.85	45.00	52.29	**14.05**	70.69	35.19
Hatay	58.02	63.13	8.81	76.53	21.23	78.58	**2.67**	86.02	9.48
Isparta	69.02	72.15	4.54	84.28	16.81	86.04	**2.09**	92.01	6.94
Mersin	69.53	72.33	4.02	81.16	12.21	83.75	**3.19**	89.16	6.46
İstanbul	82.92	83.51	0.71	88.24	5.66	90.24	**2.27**	93.38	3.48
İzmir	76.51	79.13	3.43	85.42	7.95	87.16	**2.03**	91.86	5.39
Kars	53.39	56.62	6.06	71.11	25.59	74.00	**4.07**	83.43	12.73
Kastamonu	52.72	57.25	8.59	68.88	20.31	73.37	**6.51**	81.34	10.88
Kayseri	65.46	68.38	4.47	79.17	15.78	72.41	**-8.54**	80.80	11.60
Kırklareli	75.49	80.19	6.22	86.11	7.38	82.52	**-4.16**	88.89	7.71
Kırşehir	58.73	69.27	17.95	77.66	12.11	87.94	**13.24**	92.88	5.62
Kocaeli	74.69	77.28	3.46	86.08	11.39	81.53	**-5.29**	87.52	7.35
Konya	66.68	71.49	7.22	81.13	13.48	88.12	**8.61**	92.05	4.46
Kütahya	62.69	67.12	7.07	79.42	18.33	84.14	**5.94**	90.04	7.01
Malatya	57.66	61.02	5.82	72.28	18.45	81.96	**13.39**	89.09	8.71
Manisa	63.39	68.54	8.13	78.03	13.85	78.12	**0.11**	85.35	9.26
K.Maraş	51.38	56.84	10.62	69.64	22.52	80.21	**15.18**	86.29	7.58
Mardin	35.33	36.23	2.55	48.07	32.68	54.24	**12.83**	71.22	31.32
Muğla	68.52	73.18	6.80	83.48	14.07	86.34	**3.42**	92.74	7.41
Muş	38.67	41.68	7.78	55.43	32.99	56.80	**2.46**	69.45	22.28
Nevşehir	65.52	70.34	7.35	80.93	15.06	82.57	**2.02**	88.42	7.09
Niğde	56.94	61.63	8.24	73.31	18.95	77.18	**5.28**	86.31	11.83
Ordu	49.73	55.57	11.74	70.48	26.83	75.58	**7.24**	83.12	9.96
Rize	60.35	64.4	6.71	77.41	20.20	80.03	**3.39**	87.70	9.58
Sakarya	67.84	73.69	8.62	82.09	11.40	84.77	**3.27**	90.85	7.16
Samsun	57.16	61.82	8.15	76.51	23.76	78.50	**2.60**	86.21	9.82
Siirt	34.24	36.07	5.35	51.22	42.00	51.43	**0.41**	68.72	33.61
Sinop	55.28	59.73	8.04	72.43	21.26	75.03	**3.59**	82.72	10.25
Sivas	55.37	61.48	11.03	73.03	18.79	77.98	**6.78**	85.40	9.52
Tekirdağ	72.96	78.43	7.49	85.16	8.58	56.22	**-33.98**	67.77	20.54
Tokat	57.00	59.83	4.96	72.79	21.66	87.08	**19.63**	93.01	6.81
Trabzon	58.78	63.53	8.09	77.84	22.52	76.38	**-1.88**	85.68	12.18
Tunceli	55.24	60.67	9.83	70.11	15.56	81.12	**15.70**	88.49	9.09
Ş.Urfa	35.18	38	8.02	47.92	26.11	74.31	**55.07**	83.03	11.74
Uşak	59.96	67.29	12.22	76.86	14.22	80.20	**4.34**	87.54	9.16
Van	31.51	36.77	16.70	50.78	38.10	55.43	**9.16**	68.06	22.79
Yozgat	55.21	59.89	8.48	71.47	19.34	76.11	**6.49**	86.18	13.24
Zonguldak	63.16	67.93	7.55	79.55	17.11	83.15	**4.52**	87.82	5.62

Table A3: Population Growth Rates (%) by 67 Provinces – Turkey

	1980	1985	1990	2000
Türkiye	**2.07**	**2.49**	**2.17**	**1.20**
Adana	3.61	3.00	2.29	1.77
Adıyaman	1.16	3.17	3.50	2.00
Afyon	0.62	2.20	2.06	0.95
Ağrı	2.17	2.70	0.74	1.90
Amasya	1.11	0.97	-0.06	0.16
Ankara	1.98	2.94	2.13	2.02
Antalya	2.24	3.48	4.79	4.18
Artvin	0.09	-0.23	-1.23	-1.03
Aydın	1.35	2.61	2.08	1.42
Balıkesir	1.56	1.30	1.34	1.00
Bilecik	1.39	1.81	1.74	1.00
Bingöl	1.63	1.09	0.77	0.19
Bitlis	3.33	3.08	1.86	1.63
Bolu	1.91	1.35	1.23	0.86
Burdur	1.06	1.08	0.55	0.07
Bursa	3.55	2.84	3.83	2.86
Çanakkale	1.16	1.26	0.71	0.73
Çankırı	-0.54	0.42	1.12	0.81
Çorum	0.87	0.94	0.35	-0.19
Denizli	1.46	2.02	2.36	1.24
Diyarbakır	3.56	3.66	3.17	2.17
Edirne	1.28	1.40	0.75	-0.05
Elazığ	1.07	1.86	0.59	1.34
Erzincan	-0.12	1.24	-0.05	0.57
Erzurum	1.43	1.31	-0.19	1.00
Eskişehir	1.88	1.88	1.41	0.96
Gaziantep	2.44	3.57	3.31	2.05
Giresun	0.70	0.90	-0.12	0.47
Gümüşhan	-1.30	0.61	2.13	0.29
Hakkari	4.20	3.22	4.36	3.16
Hatay	2.81	3.15	2.04	1.22
İsparta	1.63	1.79	2.54	1.67
Mersin	3.32	4.06	4.06	3.29
İstanbul	3.89	4.18	4.48	2.24
İzmir	3.33	3.18	3.01	1.14
Kars	-0.20	0.62	-1.74	-0.54
Kastamonu	0.57	-0.03	-1.22	-1.20
Kayseri	2.80	2.09	1.76	1.16
Kırklareli	1.09	0.94	0.82	0.59
Kırşehir	0.65	1.57	-0.26	-0.14
Kocaeli	4.45	4.36	4.64	2.70
Konya	1.87	2.49	2.30	2.13
Kütahya	1.10	1.78	1.24	1.28
Malatya	1.10	1.85	1.06	1.92
Manisa	1.53	2.18	1.89	0.88
K.Maraş	2.80	2.60	1.21	2.33
Mardin	1.67	2.87	2.59	2.65
Muğla	1.78	2.09	2.92	2.40
Muş	2.48	2.31	2.07	1.86
Nevşehir	0.60	1.59	0.80	0.68
Niğde	2.01	1.80	1.20	1.63
Ordu	1.43	1.36	1.66	0.71
Rize	1.43	0.70	-1.41	0.48
Sakarya	2.04	2.13	2.25	1.01
Samsun	2.13	1.90	0.88	0.40
Siirt	3.10	3.28	1.25	2.34
Sinop	0.64	0.28	-1.10	-1.62
Sivas	0.23	0.58	-0.12	-0.15
Tekirdağ	2.40	2.20	3.04	3.66
Tokat	0.83	1.68	1.15	2.85
Trabzon	0.33	1.46	0.24	1.42
Tunceli	-0.82	-0.78	-2.64	2.03
Ş.Urfa	0.18	5.54	4.62	-3.56
Uşak	1.47	1.86	1.36	1.04
Van	3.86	3.10	3.05	3.20
Yozgat	0.16	1.56	1.20	1.66
Zonguldak	2.65	1.81	0.54	-0.74

Table A4: Net Migration Rates (%) by 67 Provinces – Turkey

Provinces	1975-1980 Net Mig. Rates (%)	1980-1985 Net Mig. Rates (%)	1985-1990 Net Mig. Rates (%)	1995-2000 Net Mig. Rates (%)
ADANA	0.097	1.505	1.471	-2.414
ADIYAMAN	-3.176	-3.402	-3.681	-7.02
AFYON	-2.258	-2.497	-3.666	-2.25
AĞRI	-7.149	-4.81	-8.695	-5.64
AMASYA	-2.203	-2.982	-5.567	-2.68
ANKARA	1.852	1.208	1.77	2.56
ANTALYA	2.422	3.092	8.178	6.43
ARTVİN	-5.542	-4.767	-9.277	-6.36
AYDIN	1.503	1.343	2.433	2.55
BALIKESİR	-0.733	0.374	0.515	0.49
BİLECİK	-0.231	0.716	1.789	5.79
BİNGÖL	-4.828	-3.946	-8.047	-5.01
BİTLİS	-7.366	-3.299	-6.491	-2.12
BOLU	-0.104	-0.998	-0.797	-1.507
BURDUR	-0.671	-1.67	-3.51	-2.27
BURSA	5.589	3.848	5.715	4.51
ÇANAKKALE	-0.346	-0.447	-0.481	2.74
ÇANKIRI	-5.257	-3.492	-5.7	-1.83
ÇORUM	-4.231	-3.023	-5.609	-5.84
DENİZLİ	-0.531	0.332	1.49	1.99
DİYARBAKIR	-2.194	-1.461	-3.174	-4
EDİRNE	-0.767	-1.453	-1.887	-1.4
ELAZIĞ	-4.03	-2.956	-4.311	-2.38
ERZİNCAN	-3.255	-3.978	-8.534	-0.47
ERZURUM	-5.946	-5.879	-10.361	-5.48
ESKİŞEHİR	1.505	1.504	1.052	1.48
GAZİANTEP	-0.155	-0.462	-0.046	-0.044
GİRESUN	-3.711	-4.061	-6.973	-1.21
GÜMÜŞHANE	-7.644	-5.028	-12.83	-3.6
HAKKARİ	-1.448	-0.614	-2.874	-1.25
HATAY	1.78	0.545	-0.379	-3.39
ISPARTA	-0.8	-1.399	-1.589	3.07
İÇEL	5.194	5.292	6.494	1.24
İSTANBUL	6.727	5.653	9.986	4.54
İZMİR	6.595	3.839	5.834	3.99
KARS	-10.052	-7.087	-15.171	-5.796
KASTAMONU	-2.395	-2.459	-6.128	-3.28
KAYSERİ	1.481	-0.624	-1.771	-0.35
KIRKLARELİ	-1.125	-0.767	-1.817	1.8
KIRŞEHİR	-3.515	-2.4	-7.594	-4.51
KOCAELİ	10.028	6.171	9.922	0.02
KONYA	-0.668	-0.625	-1.405	0.0007
KÜTAHYA	0.101	0.007	-0.821	-0.18
MALATYA	-3.911	-2.031	-5.148	-2.15
MANİSA	1.005	0.66	1.902	0.32
K.MARAŞ	-1.184	-1.329	-3.918	-2.83
MARDİN	-5.316	-2.869	-6.633	-6.76
MUĞLA	0.406	0.665	3.051	7.02
MUŞ	-5.934	-4.464	-9.449	-5.98
NEVŞEHİR	-1.343	-0.514	-3.776	-0.71
NİĞDE	-1.46	-2.078	-2.98	-0.81
ORDU	-2.986	-3.276	-5.376	-4.47
RİZE	-2.404	-3.06	-7.947	-2.19
SAKARYA	0.841	1.228	0.982	-2.31
SAMSUN	-1.149	-1.291	-2.757	-4.55
SİİRT	-2.628	-3.755	-4.121	-3.24
SİNOP	-2.875	-3.513	-8.278	-7.57
SİVAS	-6.737	-4.949	-9.935	-5.1
TEKİRDAĞ	1.448	0.905	4.109	9.68
TOKAT	-2.735	-2.571	-6.54	-4.84
TRABZON	-2.329	-3.356	-6.51	-1.11
TUNCELİ	-8.188	-11.479	-14.355	-3.67
Ş.URFA	-5.855	-2.042	-2.984	-3.89
UŞAK	-0.462	-1.121	0.203	-0.69
VAN	-1.775	-2.36	-3.508	-4.36
YOZGAT	-4.346	-2.715	-6.137	-4.19
ZONGULDAK	0.986	-1.849	-2.773	-6.907

Table A5: Unemployment Rates (%) by 67 Provinces – Turkey

Provinces	1975	1980	Percentage change in unemp.rate 1975-1980	1985	Percentage change in unemp.rate 1980-1985	1990	Percentage change in unemp.rate 1985-1990	2000
Adana	3.9	5.5	39.9	9.0	63.6	10.7	18.9	14.3
Adıyaman	0.3	3.7	1005.1	5.3	43.2	7.5	41.5	11.1
Afyon	0.1	1.8	1637.8	3.1	72.2	4.1	32.3	5.0
Ağrı	0.2	3.5	1926.0	4.2	20.0	5.1	21.4	10.0
Amasya	0.1	2.7	1812.9	4.3	59.3	4.5	4.7	4.9
Ankara	2.8	5.8	109.6	7.6	31.0	7.6	-0.3	11.1
Antalya	2.3	2.7	15.6	3.2	18.5	3.9	21.9	7.9
Artvin	0.2	2.1	809.1	3.0	42.9	3.7	23.3	7.0
Aydın	1.2	2.9	135.5	2.6	-10.3	3.1	19.2	5.5
Balıkesir	1.6	2.3	40.6	2.8	21.7	3.7	32.1	5.0
Bilecik	0.3	2.1	670.1	3.0	42.9	3.0	0.0	4.7
Bingöl	0.5	4.0	699.5	5.0	25.0	4.7	-6.0	9.3
Bitlis	0.0	4.4	9157.7	7.3	65.9	6.4	-12.3	12.6
Bolu	0.1	2.7	1788.7	2.3	-14.8	3.0	30.4	5.0
Burdur	0.1	2.1	2127.1	3.0	42.9	3.5	16.7	4.7
Bursa	2.0	3.4	68.8	4.0	17.6	4.5	12.5	9.3
Çanakkale	0.1	1.6	1016.1	2.0	25.0	1.9	-5.0	3.6
Çankırı	0.1	1.9	2012.0	2.9	52.6	3.7	27.6	5.5
Çorum	0.1	1.8	2954.9	2.9	61.1	3.1	6.9	5.4
Denizli	0.4	2.4	560.4	2.2	-8.3	2.6	18.2	4.1
Diyarbakır	3.6	7.1	99.7	6.7	-5.6	11.5	71.6	14.2
Edirne	0.1	1.9	1368.4	3.2	68.4	3.0	-6.3	5.0
Elazığ	2.8	5.4	94.0	6.0	11.1	9.4	56.7	10.7
Erzincan	1.7	2.0	18.2	3.0	50.0	4.1	36.7	6.8
Erzurum	2.1	2.4	15.5	3.2	33.3	5.2	62.5	9.1
Eskişehir	3.0	4.6	51.5	6.0	30.4	6.2	3.3	8.4
Gaziantep	3.6	3.6	-0.7	6.8	88.9	7.7	13.2	10.9
Giresun	3.4	2.9	-15.0	4.7	62.1	5.7	21.3	8.9
Gümüşhane	2.8	1.5	-46.0	2.6	73.3	3.9	51.5	6.2
Hakkari	0.5	2.8	519.7	2.8	0.0	3.8	35.7	12.2
Hatay	0.3	4.5	1402.8	5.3	17.8	6.8	28.3	6.7
İsparta	2.2	2.6	18.9	3.8	46.2	4.8	26.3	6.4
Mersin	0.1	5.6	3740.8	7.1	26.8	8.3	16.9	10.2
İstanbul	2.9	5.5	88.7	7.0	27.3	6.2	-11.4	12.6
İzmir	1.9	4.6	142.8	5.3	15.2	5.7	7.5	10.8
Kars	1.7	1.7	2.5	2.7	58.8	3.6	33.3	6.4
Kastamonu	1.3	1.4	9.4	1.7	21.4	1.8	5.9	3.7
Kayseri	0.2	5.2	2511.3	5.4	3.8	6.7	24.1	8.5
Kırklareli	0.1	2.1	1457.0	2.9	38.1	3.1	6.9	5.1
Kırşehir	0.1	3.5	3807.5	5.8	65.7	5.9	1.7	8.2
Kocaeli	3.0	5.2	74.4	6.3	21.2	6.9	9.5	8.3
Konya	3.2	3.0	-4.9	4.8	60.0	5.0	3.1	6.3
Kütahya	1.1	1.7	52.9	2.1	23.5	3.0	42.9	4.7
Malatya	0.1	3.9	3588.3	5.3	35.9	6.8	28.3	8.9
Manisa	1.4	2.6	79.7	2.7	3.8	2.8	3.7	4.5
K.Maraş	0.1	4.3	7327.4	5.0	16.3	5.6	12.0	7.8
Mardin	3.3	3.2	-3.8	4.8	50.0	9.0	87.5	13.0
Muğla	0.1	2.0	1670.4	2.6	30.0	2.8	7.7	4.3
Muş	0.1	2.6	4009.5	3.0	15.4	3.6	20.0	7.4
Nevşehir	0.2	1.9	789.1	2.3	21.1	2.9	26.1	4.8
Niğde	0.2	2.5	1506.2	3.0	20.0	3.9	30.7	5.2
Ordu	0.0	2.2	5823.6	3.2	45.5	5.4	68.8	8.1
Rize	6.7	2.5	-62.8	3.3	32.0	5.0	51.5	10.3
Sakarya	0.1	2.6	3349.2	3.5	34.6	3.5	0.0	7.1
Samsun	1.2	2.8	133.6	4.1	46.4	4.7	14.6	6.6
Siirt	2.4	4.3	81.7	6.9	60.5	6.4	-7.5	7.0
Sinop	0.1	1.5	1871.6	2.0	33.3	3.2	60.0	4.8
Sivas	2.4	3.9	61.1	4.3	10.3	6.0	39.5	7.3
Tekirdağ	0.2	2.1	1258.5	3.5	66.7	2.8	-20.0	6.3
Tokat	0.9	2.1	126.5	3.4	61.9	3.7	8.8	6.4
Trabzon	0.1	2.7	3223.3	4.2	55.6	4.7	11.9	8.3
Tunceli	0.3	2.6	723.6	4.1	57.7	6.4	56.1	6.2
Ş.Urfa	4.9	4.0	-18.3	5.9	47.5	7.7	30.5	14.5
Uşak	2.3	2.8	24.3	3.8	35.7	4.1	7.9	5.7
Van	0.1	3.1	4103.1	4.1	32.3	6.5	58.5	10.8
Yozgat	0.1	1.8	1772.2	2.8	55.6	3.4	21.4	6.8
Zonguldak	1.2	7.4	497.8	6.6	-10.8	4.6	-30.3	3.1

APPENDIX B: SUPPLEMENTARY TABLES FOR CHAPTER FOUR

Table B1: Classification of Statistical Regions (SRE) – Turkey

	Nuts Level1	Nuts Level2	Nuts Level3	Nuts Level1	Nuts Level2	Nuts Level3		Nuts Level1	Nuts Level2	Nuts Level3
TR	**Türkiye**									
TR1	**İstanbul**			TR5	**West Anatolia**			TR9	**East Black Sea**		
TR10		İstanbul		TR51		Ankara		TR90		Trabzon	
TR100			İstanbul	TR510			Ankara	TR901			Trabzon
TR2	**West Marmara**			TR52		Konya		TR902			Ordu
TR21		Tekirdağ		TR521			Konya	TR903			Giresun
TR211			Tekirdağ	TR522			Karaman	TR904			Rize
TR212			Edirne	TR6	**Mediterranean**			TR905			Artvin
TR213			Kırklareli					TR906			Gümüşhane
TR22		Balıkesir		TR61		Antalya		TRA	**North East Anatolia**		
TR221			Balıkesir	TR611			Antalya	TRA1		Erzurum	
TR222			Çanakkale	TR612			Isparta	TRA11			Erzurum
TR3	**Aegean**			TR613			Burdur	TRA12			Erzincan
TR31		İzmir		TR62		Adana		TRA13			Bayburt
TR310			İzmir	TR621			Adana	TRA2		Ağrı	
TR32		Aydın		TR622			Mersin	TRA21			Ağrı
TR321			Aydın	TR63		Hatay		TRA22			Kars
TR322			Denizli	TR631			Hatay	TRA23			Iğdır
TR323			Muğla	TR632			Kahramanmaraş	TRA24			Ardahan
TR33		Manisa		TR633			Osmaniye	TRB	**Central East Anatolia**		
TR331			Manisa	TR7	**Central Anatolia**			TRB1		Malatya	
TR332			Afyon	TR71		Kırıkkale		TRB11			Malatya
TR333			Kütahya	TR711			Kırıkkale	TRB12			Elazığ
TR334			Uşak	TR712			Aksaray	TRB13			Bingöl
TR4	**East Marmara**			TR713			Niğde	TRB14			Tunceli
TR41		Bursa		TR714			Nevşehir	TRB2		Van	
TR411			Bursa	TR715			Kırşehir	TRB21			Van
TR412			Eskişehir	TR72		Kayseri		TRB22			Muş
TR413			Bilecik	TR721			Kayseri	TRB23			Bitlis
TR42		Kocaeli		TR722			Sivas	TRB24			Hakkari
TR421			Kocaeli	TR723			Yozgat	TRC	**South East Anatolia**		
TR422			Sakarya	TR8	**West Black Sea**			TRC1		Gaziantep	
TR423			Düzce	TR81		Zonguldak		TRC11			Gaziantep
TR424			Bolu	TR811			Zonguldak	TRC12			Adıyaman
TR425			Yalova	TR812			Karabük	TRC13			Kilis
				TR813			Bartın	TRC2		Şanlıurfa	
				TR82		Kastamonu		TRC21			Şanlıurfa
				TR821			Kastamonu	TRC22			Diyarbakır
				TR822			Çankırı	TRC3		Mardin	
				TR823			Sinop	TRC31			Mardin
				TR83		Samsun		TRC32			Batman
				TR831			Samsun	TRC33			Şırnak
				TR832			Tokat	TRC34			Siirt
				TR833			Çorum				
				TR834			Amasya				

Source: TURKSTAT, (2006)