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**REGIONAL IMBALANCES AND CONVERGENCE
ACROSS REGIONS IN TURKEY: EVIDENCE FROM
FIXED EFFECTS MODEL**

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1. The material included in this thesis has not been submitted wholly or in part for any academic award or qualification other than that for which it is now submitted.
2. The program of advanced study of which this thesis is part has consisted of:
 - i) Research Methods course during the undergraduate study
 - ii) Examination of several thesis guides of particular universities both in Turkey and abroad as well as a professional book on this subject.

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ABSTRACT

REGIONAL IMBALANCES AND CONVERGENCE ACROSS REGIONS IN TURKEY: EVIDENCE FROM FIXED EFFECTS MODEL

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After the Industrial Revolution some countries has gone through a rapid growth and development process which also led to serious problems. Among the undesired effects of industrialization, one of the most important problem that comes with industrialization process is the socio-economic developmental imbalances across regions. These imbalances seem to lead to several negative consequences such as income inequality and internal migration. Regional imbalances in Turkey started in the last period of the Ottoman Empire and has continued to increase during the Republic period. This thesis focuses on the emergence of imbalances in Turkey, the policies which have been formulated and applied on this problem and the current status of these imbalances. The past and present status of these imbalances are compared with nine indicators such as population, urbanization and foreign trade. In addition, convergence analysis is applied on income variable which is the most important indicator of these imbalances. This analysis reveals that there is a convergence or divergence across regions in terms of per capita income levels in selected time period. In this thesis, absolute and conditional convergence analyses are implemented by using the per capita income datas of 26 NUTS 2 level regions for 1987-2011 period and panel data analysis has been conducted with fixed effects model. As a result of the analysis, there is no evidence for absolute convergence across regions in Turkey between 1987 and 2001 but there is a strong evidence for absolute convergence for 2004-2011 period. The existence of conditional convergence has identified as a result of conditional convergence analysis which has been implemented by using public investments as an additional variable.

Key Words: Regional Development, Regional Policy, Regional Imbalances, Convergence, Fixed Effects Model

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KISA ÖZET

TÜRKİYEDE BÖLGESEL FARKLAR VE BÖLGELER ARASINDA YAKINSAMA: SABİT ETKİLER MODELİ UYGULAMASI

Halil İbrahim ÇELİKEL

Sanayi Devrimi'nin ardından ülkelerin yaşadığı büyüme ve gelişme süreci, birçok sorunu da beraberinde getirmiştir. Bu sorunlardan en önemlilerinden biri de ülkeler içerisinde ortaya çıkan sosyo-ekonomik gelişmişlik farklılıklarıdır. Bu farklılıkların ülke içerisinde iç göç, gelir eşitsizliği gibi birçok olumsuz sonuç doğurduğu görülmektedir. Türkiye'de bölgeler arası gelişmişlik farklılıkları, Osmanlı Devleti'nin son dönemlerinde başlamış ve Cumhuriyet döneminde de artarak devam etmiştir. Bu tezde Türkiye'de var olan bölgeler arası gelişmiş farklılıklarının nasıl ortaya çıktığı, bu problem üzerine uygulanan politikalar ve bu farklılıkların bugünkü durumu üzerinde durulmuştur. Başta nüfus, şehirleşme ve dış ticaret olmak üzere dokuz farklı sosyal ve ekonomik göstergyle bölgeler arasındaki bu farklılıkların geçmişteki ve günümüzdeki durumları karşılaştırılmıştır. Bunlara ek olarak bu farklılıkların en önemli göstergesi olan bölgesel gelir değişkeni üzerine yakınsama analizi yapılmıştır. Gelir yakınsaması analizi, bölgelerin kişi başına düşen gelirlerinin zaman içerisinde birbirine yaklaşp yaklaşmadığını ortaya koymaktadır. Tezimizde 26 NUTS 2 düzey bölgesinin 1987 ile 2011 arası kişi başı gelir verileri kullanılarak sabit etkili panel veri yöntemiyle yakınsama analizi, mutlak ve koşullu olmak üzere iki şekilde uygulanmıştır. Yapılan analizin sonucunda, Türkiye'de 1987-2001 döneminde bölgesel gelir açısından mutlak yakınsamanın görülmediği aksine uzaklaşmanın görüldüğü, 2004-2011 döneminde ise mutlak yakınsamanın görüldüğü sonucuna ulaşılmıştır. Aynı dönemler için yapılan ve kamu yatırımları değişkeninin analize sokulduğu koşullu yakınsama analizi sonucunda ise, koşullu yakınsamanın varlığı tespit edilmiştir.

Anahtar Kelimeler: Bölgesel Kalkınma, Bölgesel Politika, Bölgesel Dengesizlikler, Yakınsama, Sabit Etkiler Modeli

FOREWORD

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LIST OF ABBREVIATIONS

DAP	: Eastern Anatolian Project
DOKAP	: Eastern Black Sea Project
DPT	: State Planning Organization
EAGGF	: European Agricultural Guidance and Guarantee Fund
EC	: European Community
ERDF	: European Regional Development Fund
EU	: European Union
FIFG	: Financial Instrument Fund for Fisheries Guidance
FYDP	: Five Year Development Plan
GAP	: Southeast Anatolian Project
GDP	: Gross Domestic Product
GRDP	: Gross Domestic Regional Product
GVA	: Gross Value Added
HES	: Hydroelectric Power Plants
IBBS	: Statistical Region Units Classification
JICA	: Japanese International Development Agency
KOY	: Priority Region for Development
KSS	: Small Industrial Area
MMR	: Maximum to Minimum Ratio
NUTS	: Nomenclature Of Territorial Units For Statistics
OSB	: Organized Industrial Zone
SEGE	: Socio-Economic Developmental Index
TR	: Turkey
TR1	: Istanbul Region
TR10	: Istanbul Subregion
TR2	: West Marmara Region
TR21	: Tekirdag Subregion
TR22	: Balikesir Subregion
TR3	: Aegean Region
TR31	: Izmir Subregion

TR32	: Aydin Subregion
TR33	: Manisa Subregion
TR4	: East Marmara Region
TR41	: Bursa Subregion
TR42	: Kocaeli Subregion
TR5	: West Anatolia Region
TR51	: Ankara Subregion
TR52	: Konya Subregion
TR6	: Mediterranean Region
TR61	: Antalya Subregion
TR62	: Adana Subregion
TR63	: Hatay Subregion
TR7	: Central Anatolia Region
TR71	: Kirikkale Subregion
TR72	: Kayseri Subregion
TR8	: West Black Sea Region
TR81	: Zonguldak Subregion
TR82	: Kastamonu Subregion
TR83	: Samsun Subregion
TR9	: East Black Sea Region
TR90	: Trabzon Subregion
TRA	: Northeast Anatolia Region
TRA1	: Erzurum Subregion
TRA2	: Agri Subregion
TRB	: Centraleast Anatolia Region
TRB1	: Malatya Subregion
TRB2	: Van Subregion
TRC	: Southeast Anatolia Region
TRC1	: Gaziantep Subregion
TRC2	: Sanliurfa
TRC3	: Mardin Subregion
TURKSTAT	: Turkish Statistical Institute
YHGP	: Yesilirmak River Basin Development Project
ZBK	: Zonguldak Bartın Karabuk Regional Development Project

INTRODUCTION

Economic growth and development concepts have gained importance especially after the Industrial Revolution. Major industrialized countries increased their income and living standards but they had to face some side effects. Although the national income was rising as a natural result of industrialization, this growth was not being distributed fairly among the regions.. This unequal distribution caused some regions to remain underdeveloped from both economic and social aspects.

Even though these problems have stayed in the background in the first half of the 20th century, during which two World Wars occurred, after the World War II it began to hold an important place in economic policy of countries and regional unions. However, the first attempts aimed to reduce the regional imbalances in this period. In the USA, as the place where Great Depression of 1929 started, an immediate rise in terms of spatial inequalities was seen as a result of the crisis. The world's first regional development program was launched in the US Tennessee Valley. This project has been completed in nine years and the valley has become a highly efficient region in terms of agriculture. As the first example of its kind, Tennessee Valley project has become one of the most important items on the agenda of all countries, notably in EU after World War II.

The origins of the regional imbalances for Turkey goes up to 16th century when the Ottoman Empire started declining. The differences between the country's east and west has been a problem since 16th century. Until 1960s, although some projects were implemented, these attempts did not work and it can be said that they deepened the problem. During this planned period, five-year development plans were prepared to reduce disparities between regions in addition to the overall development of the country and some projects have been applied in underdeveloped regions.

Some investments have been made, some investment incentives have been given and some development projects have been prepared for the underdeveloped regions under the title of “Priority Region for Development” (KOY) which was first identified in 1968 and took place in III. FYDP. The most important regional project is Southeast

Anatolian Project (GAP) in that manner. Serious amount of investment has been made to the Southeast Anatolian Region with this project which is the second most underdeveloped region of Turkey. Besides, East Anatolian Project has been carried out in the most underdeveloped region of Turkey, East Anatolian Region. Moreover, lots of regional development projects have been continuing in some other specific regions.

The comparison with the above-mentioned regional imbalances of the current situation and the situation in the past constitute the main axis of the thesis. The most important indicator of the regional imbalances will be examined through convergence analysis with public investments variable.

The thesis consists of three parts. In the first part, some of the concepts associated with regional development and regional development policy are explained. Starting with how the concept of the region is covered in the literature, this section also includes information on how to use these concepts in the field of economy. Besides, what does various definitions of the term regional development is discussed and possible ways to ensure regional development are described from the perspective of different schools of economics. The definition and appearance of and changes caused by regional imbalances are explained in the first part. Information on regional development policy is presented at the end of the section.

In the second part, Turkey has been emphasized in particular according to the concept generally described in the first chapter. First, the historical origins of regional imbalances in Turkey are mentioned as geographical, historical and cultural situations. After that, the policies pursued in order to overcome regional imbalances in Turkey are explained. Regional policies which are included in FYDPs, which have been prepared since the beginning of the planned period, are given for each FYDPs. Some projects which were prepared and came into action during this period also have been mentioned. After that, data of some selected variables which reveal the status of the development gap between regions in Turkey are compared as of year. At the end of the section, "Socio-economic Development Index in Turkey" which was made by the Ministry of Development values are given.

Third chapter focuses on regional distribution of income which can be named as the most important indicator of imbalances across regions. In this section, the regional

distribution of regional per capita GDP is examined. Using the GRDP data for 1987-2011 period, it is investigated whether income convergence took place among regions in this process. This analysis is done in two different ways: First, some criterion for measuring regional income disparities are used and the convergence analysis is made by comparing the calculated values of this measures by years in the “The analysis of income inequalities in Turkey with static measures” section. Second, the convergence analysis which has been proposed by Barro and Sala-i Martin (1992, 1995) is used in order to reveal the existence of per capita income convergence between regions. The existence of income convergence is investigated for the selected time period as a result of the application being carried out using panel data analysis with fixed effects model. In addition to that, we conducted the conditional convergence analysis which includes public investments variable as a control variable to take the structural differences across regions into account.

In the literature, although many studies has been made on Turkey, especially the number of studies covering the period between 2004 and 2011 is very low. Moreover, cross-sectional analysis has been used in many of the studies and the number of studies measuring convergence with the abovementioned static methods are also very few. There is no study which measures β convergence using panel data analysis with fixed effects model. In addition, the number of recent studies outlining the current status of the development gap between regions in Turkey are very few. This thesis will focus on these issues which are not covered in the literature too much.

CHAPTER I

THEORETICAL FRAMEWORK OF THESIS

1.1. Region

The definition of the concept “region” differs in accordance with the period and scientific field in which the concept is used. The word originally comes from the Latin word “region” which means “the environment, part of the land.” The concept of region, which also began to find its equivalence in scientific sense from the 18th century, has become a spatial definition that includes more variables with the addition of geographic features to its definition. During this period, while trying to make border definitions, the cartographers came to realize that water basins showed a certain integrity and they used rivers and mountain peaks in order to make regional definitions (Eraydin, 2004).

The concept of regional development has begun to gain more significance since the second half of the 20th century. Although the researchers, who conduct studies in the field of regional development, are interested in making sense of regional growth and contraction processes, there seems to be significant differences among them with regard to how the concept of “region” would be defined (Dawkins, 2003).

Christaller (1933) and Losch (1954) attempted to explain the concept of region with “Central Place Theory” that they put forward. In this theory, the region is defined as “the hierarchical systems of central places or cities.” Each region consists of a small number of top-level and numerous low-level cities. The level of a city is determined in proportion to the multitude of goods and services available in the city. It is expected that top-level cities and low-level cities would not engage in exports and imports respectively and the cities in the same level would not be in communication with one another (Dawkins, 2003).

Region, in another approach, is defined spatially as mutually-dependent (or “nodal”) labor market. According to Hoover and Giarratani (1985), nodal regions have two main characteristics: (i) these regions are functionally integrated within themselves

in accordance with the flows of capital and goods in the region compared to other region



and (ii) economic activities are directed to a more dominant area (node) within the region compared to other regions.

In another approach put forward by Richardson (1979), the region is defined as “Planned zones” corresponding to the political or administrative units. In this approach, the planners and politicians develop policies for political or administrative regions whose boundaries have previously been determined.

Hettne (1994) explained the concept of region in a comprehensive way in the classification he made. According to this classification, the region,

- i. is a geographical and ecological unit whose boundaries are determined by natural barriers.
- ii. is a social system where cultural, political and economic interactions take place.
- iii. is a cooperation managed by versatile regional organizations and has become organized in cultural, economic, political or military areas.
- iv. is a civil society stemming from a culture, social communication and convergence of values.
- v. is a historical entity with different identities (European Union) that plays a role as a political actor with a certain degree of legitimacy.
- vi. Public administration dictionary (Bozkurt et al., 1998) defined the region by dividing it into four categories:
 - i. A piece of land constituting a whole in terms of its geographical or social (physical or cultural) characteristics and differentiating itself from adjacent regions with these characteristics.
 - ii. A civilian administration level between cities and central government administration.
 - iii. A geographic-administrative unit where some services, needing coordination in geographical units larger than cities, are carried out.
 - iv. A local government level in some countries such as France, Belgium and Italy.

Keleş (1999) has proposed an alternative differentiation in order to define the concept which seems to be more useful. According to this definition, regions are first divided into three categories and these categories are also divided into sub-categories. The first category divides regions as 'natural region', 'economic region', 'sociologic region' and 'administrative region'. In the second category, regions are divided into two by considering the way they are created artificially. The first is the regions created by the relevant organizations for the purpose of planning; the second is the regions that are administrative steps between the state and local governments. Third categorization is based on the structural characteristics of the region. Three different types of regions come into question from this perspective. The first of these are provincial units or regional organizations created by the decentralization decision of the state. The second is local governments created across the region (as in France and Italy). A third one is regions that benefit from regional autonomy, have separate constitution and possess legislative and jurisdiction prerogatives (like the German states).

From the economic perspective, the region is defined as a part of an area not as large as a country, but not as small as a town (Keskin and Sungur, 2010). Considering it from the economic perspective, it is not appropriate to define the region as a planning and analysis unit to be either as small as a town or as large as a country (Kaya, 2009). The concept of region has emerged in the process of reducing the macroeconomic analysis to subdivisions across the country and there is a need for classification and limitation in spatial analysis. This need of classification is also met with the concept of region. The region acts as a scale in economic analysis. It is used in the elimination of the deficiencies that arise in the analysis of macroeconomic issues. In addition, the region is treated as a unit with the purpose of grasping the whole country since the sources in developing countries are scarce. The best method in gathering the necessary information and comparing these data after analyzing them is still dividing the country into regions in appropriate sizes (Durman, 2001).

As a result, the region can be defined with one or more characteristics and it can also be determined with concepts for all of the people living in a specific place. The most commonly used characteristics in determining this area can be listed as follows when considering it from the perspective of social sciences (Özel, 2003):

- i) Ethnic, cultural or linguistic characteristics,

- ii) Climate or topography,
- iii) Industrial or urban development,
- iv) Administrative units,
- v) Economic specialization,
- vi) International political relations.

Regional policies play an important role within the policies of the European Union. For EU, the region is defined as “parts of a whole area that are similar or close from geographical, ecological, economic, cultural, ethnic, urban and administrative perspectives” (Mengi, 1998). EU created the NUTS system in the early 1970s within the context of regional policies in order to keep track of the regional policies of the member or candidate countries over regional statistics in a more regular and effective way. According to this system, the countries were primarily divided into regions at NUTS 1 level, these regions were divided into smaller units within themselves called NUTS 2 and they were also divided into regions at NUTS 3 level again within themselves.

In Turkey, the division of the country into 7 geographical regions, used until the first half of 2000, has been re-arranged with the EU accession process and NUTS system has been implemented. Currently, Turkey is divided into 11 regions at NUTS 1 level, 26 regions at NUTS 2 level and 82 regions composed of previously existing provinces at NUTS 3 level.

1.2. Categorization of Regions

It has been mentioned above that the earth and countries have been divided into regions in different areas in accordance with specific criteria. However, it is still possible to categorize these regions according to their characteristics and certain criteria (Durman, 2001). Many different regional divisions are found in the works dealing with regional development and planning. The first systematic study on the subject belonged to Von Thunen who has been considered as the founder of spatial economy (Gündüz, 2006).

Regional divisions are generally made either in accordance with the economic structures of the regions or the level of their economic development. The most

widely accepted division in this field is the division made by the French regional planner and economist Jacques Bouddeville. According to this classification, the regions are divided as follows (Gündüz, 2006);

- i) Homogeneous Region
- ii) Polarized Region
- iii) Planned Region.

Alternatively, the regions are also divided as “less-developed region” and “developed region” in another division made according to the development levels of the regions.

1.2.1. Regions from macroeconomic perspective

Regions can be divided as homogenous, polarized and planned regions from macroeconomic perspective. The most important point in this division is the creation of planned regions that will be put forward for the formation and execution of regional policies on the basis of homogeneous and polarized regions.

Homogeneous region: Dinler (2014) defines the homogeneous region as “adjacent provinces with the same level of development constitute homogeneous region in terms of the level of development.”

At first, the concept of “homogeneous area” should be defined in order to obtain a better understanding of the homogeneous region. The word “homogeneous” comes to mean as “the one whose all parts are in the same structure or quality, coherent.” The homogeneous space concept can be defined as “an area whose all points show as much similar characteristics as possible among themselves.” Different criteria can be used to determine whether or not different regions within a country constitute a homogeneous area by comparing each one of them with one another. Some of these criteria can be ordered as such;

- i) The national income per capita,
- ii) Employment rates,
- iii) Urban-rural population ratio,
- iv) Educational level,
- v) The number of industrial enterprises.

vi) Nutrition level and etc.

As can be seen from the criteria mentioned above, the homogeneity among the various areas at the country level is measured by the help of the criteria that determine the level of economic development. Taking anyone of these criteria homogeneous regions can be determined. For example, the settlement centers can be sorted according to per capita income level and the centers with the same per capita income level form a homogeneous region based on this criterion. As can be understood from things mentioned up to now, homogeneous region is a union comprised of spots that show the same or similar economic characteristics (Dinler, 2014).

The above mentioned homogeneous areas need to be identified first in order to classify homogeneous region. To do this, all socio-economic indicators of settlements should be taken into consideration and the socio-economic development levels of these places needs to be determined (Dinler, 2014). This kind of study in Turkey was conducted for the first time by the State Planning Organization using the data from 53 socio-economic indicators belonging to the years 1963-1970. The provinces were ranked according to their level of development and were divided into 8 groups as a result of this study. Each obtained group constituted a homogeneous region (Gündüz, 2006). This study was updated by DPT in 2003 and 2011 and was published as a report by the title of Research on the Socio-Economic Developmental Rankings of Provinces and Regions (SEGE).

According to this, the homogeneous region is a group of neighboring areas that always correspond to a homogeneous area, joined one another and possess the same characteristics (Dinler, 2014). In other words, while settlements with the same level of development were implied with the concept of homogeneous area, the settlement centers' adjacency to one another was stipulated in order these homogeneous areas to be defined as homogeneous regions. For example, while 12 provinces located in the third level of the above-mentioned SEGE-2011 form homogeneous areas, Gaziantep, Trabzon, Samsun and Burdur provinces, included in this level, are not referred to as homogeneous regions because they are not adjacent.

Homogeneous region is a very commonly used method while carrying out regional classification in the field of geography. Homogeneous regions are determined on the

basis of homogeneous areas while preparing maps displaying characteristics such as climate zones, precipitation zones, vegetation, etc., in the world (Dinler, 2014).

Setting out from the things mentioned above, homogeneous region is whole formed by the adjacent settlements whose standards are the same in accordance with one or several criteria (Gündüz, 2006). Accordingly, homogeneous region can be defined as a continuous space consisting of units whose regional characteristics are as close as possible to each other (Durman, 2001).

Polarized region: All settlements in the country are in close interaction with each other and, in fact, this reveals the existence of a dynamic relationship between the regions. However, the socio-economic indicators of settlements are taken into consideration in the previous section describing the determination of homogenous region and this causes the homogenous region division to become a more static approach because it covers a certain period of time. In this case, a settlement's relationship with other centers should be taken into consideration while determining the regional development policy. This approach will lead us to the concept of polarized region (Dinler, 2014).

Polarized region can be defined as the area consisting of a center and the hinterland that surrounds it (Durman, 2001). Small centers commercially depend on large settlements. In other words, they are under the charm of settlements that are larger than themselves. Similarly, the large settlements are also under the influence of even larger settlements. A larger settlement which becomes a center of attraction after taking one or several settlements smaller than itself under its influence, and smaller settlements that remain under its influence form a polarized region together (Dinler, 2014).

The formation process of polarized regions can be explained as follows: the region will have certain advantages economically once development begins at a center and the capital and labor force, wishing to benefit from these advantages, start to arrive from less developed regions to developed regions. Starting from less-developed regions towards the developed regions, this flow causes the growth of cities, the expansion of existing businesses and the establishment of new businesses with the impact of the external economies. Several additional opportunities appear for people, companies and families in this process. The ease of finding jobs, people's chance to

have social security, entertainment venues, opportunities that ensure the rise of educational level such as quality schools, teachers and libraries, cultural activities like theater and museum and higher quality health services can be mentioned among these possibilities (Durman, 2001).

It is necessary to present the commercial intensity between settlements in the determination of polarized regions. The intensity of these relationships can be determined by using methods such as input-output table, cargo and passenger transport by road, rail and sea and the volume of telephone conversations among cities (Dinler, 2014).

A study on the determination of polarized regions in Turkey was conducted by DPT in 1982. Our country was hierarchically divided into seven groups following this study. While centers in village-disposition were located in the first step of the hierarchy, namely in the lowermost step, Istanbul, which appeared to take all of Turkey under its influence, was found in the top step, namely the seventh step, of the hierarchy (Dinler, 2014).

Some negative effects of polarized regions may occur with regard to the country. These regions may prevent the development of that particular region by drawing the production factors of the adjacent regions. For example, such a kind of relationship between Ankara and Kirsehir, which are neighboring provinces, caused Kirsehir province to remain far behind in terms of the level of development (Gündüz, 2006).

Planned region: Planned region can be defined as an area remaining under the jurisdiction of the regional government that will implement the determined regional policy; in other words, the whole of areas in which the regional plan is applied. The regional government can be in or out of the region, namely at the center, in accordance with the administrative system of the country or the nature of the plan to be applied. Planned regions are generally of two types: the first type is the planned regions covering all of the country and the second one is the planned regions developed in order to solve the problems emerged in a certain region. The problems that will require planning specific to these regions in the determination of the second type of planned regions can be organized as follows:

- i) Alleviating or completely eliminating the problems of backward regions,
- ii) The prevention of collective agricultural migration,

- iii) Reduction of unemployment,
- iv) Mobilizing the rich underground and above-ground resources found in the region, but cannot be processed,
- v) Solving the problems of rapidly-industrialized regions,
- vi) Preventing the concentration of population in certain areas, in other words, the internal migration,
- vii) Re-mobilizing the regions weakened economically (Dinler, 2014),
- viii) Ensuring sustainable development, etc. (Gündüz, 2006)

A new regional division that becomes prominent recently in the planning of the region in order to resolve the above-mentioned regional problems is “the basin-based regional planning.” This regional planning type comprises the consideration of environmental issues that has attracted great attention beginning in the 1970s until today, increased gradually with policies implemented during the economic development and affected the entire world, the reconsideration of economic development plans in this regard as well as the implementation of the recommended “sustainable development” concept to the regional planning area (Dinler, 2014).

The region type has utmost importance in determining the planned regions. Homogeneous or polarized regional divisions as well as both of them can be used in determining the first type of planned region. In addition, the political situation of the country may also be effective in determining these regions. As previously stated, emerging regional problems become prominent in determining the second type of planned regions. The regions arose here may consist of one province as well as several provinces if the problems cover more than one province. Planned regional determination for the development of the relatively under-developed Tennessee Valley following the Great Depression of 1929 in the United States and the one carried out for the development of relatively backward southern region in Italy can be provided as examples for the second type of plans in the world (Dinler, 2014).

Some different methods are also used for determining planned regions according to “Eighth Five-Year Development Plan – Regional Development Special Commission Report” published by the DPT in 2000. These methods are techniques such as cluster analysis, factor analysis, discriminant analysis, and input-output analysis. Provinces

can be grouped by using these methods. Setting off from the regions determined, intra-regional planning can offer ease in the resolution of internal problems of the planned region or in decision-making process for the transition to inter-regional planning approaches.

Works on determining the first and second types of planned regions have been made in our country during the period beginning from the implementation of regional policies until today. The division of first type planned region has been attempted four times so far including the latter Statistical Region Units Classification (IBBS) which is valid now in the management of regional policies. The division of second type planned region is realized in the form of planned region works where projects, such as Eastern Marmara Project, Zonguldak Project, Eastern Anatolian Project, Southeastern Anatolian Project (GAP), etc., are being practiced and implemented.

1.2.2. Regions in terms of development

Another method that can be used in the categorization of the regions is to subject regions to discrimination by taking their level of development into consideration. Differences in economic and social development among countries, caused by human, historical and geographical reasons, can also be seen among regions within the country due to similar reasons. In such a case, regions can be divided into two as “less-developed regions” and “developed regions” according to their level of development (Durman, 2001).

Less developed regions can be defined as disadvantaged regions in terms of social and economic factors with regard to other regions when compared with the whole country. The lowness of income level and income growth rate with reference to the overall country level, dependence of economic activities usually on agriculture, region’s population growth rate being greater than that of the country, low education level, healthcare services’ being behind of the country’s overall level and limited employment opportunities are the main characteristics of the less-developed regions (Gündüz, 2006). Climate, landforms, ineffective policies and the distance from the transportation network can be ranked as reasons for the low level of development in a region. Internal migration takes place from these regions to the above-mentioned centers of attraction due to all these reasons. Even though it might be below the country’s average, the income level of the region can be increased through an

effective regional policy. Policies, such as investments that will be made by the public or private sector through incentives, the mobilization of underground or above-ground resources found in the region but could not be processed effectively, etc., may bring the situation of these regions to a better position compared to other regions.

Developed region is the region that is advantageous (or superior) in terms of economic and social indicators with the regard to other regions when compared with country's overall situation. The region is superior compared to other regions not only in terms of income level, but also in terms of the intensity of social and cultural activities (Durman, 2001). High efficiency of production factors, the absence or very little of imbalance in factor distribution, adequacy of infrastructure investment, regularity in income distribution, intake of external migration, development speed being higher than the country's average, and higher investments depending on the highness of savings can be ranked as distinctive features of developed regions (Gündüz, 2006).

1.3. Regional Development

What is implied by the word “development” must first be understood in order to explain the concept of regional development. Development, in its dictionary meaning, is defined as “the growth or change of someone or something and the process of becoming more advanced.” If we look at it from economic aspect, the development is a concept that does not only refer to economic growth but also to the country's development from social perspectives.

Economic dimensions, such as growth, creation of welfare and employment, is used to explain what the concept of regional development implied when looking at the literature on this subject (Armstrong and Taylor, 2000). Although the concept of regional development is a concept that can vary among countries and within the country, it has a definition that can be agreed upon: it is a set of activities applied with the aim of improving the economic situation of a region (Beer et al., 2003). A broader definition was offered by Apostolache (2014): Regional development is a concept focused on reducing the socio-economic differences between various regions, improving citizens' quality of lives and diversifying economic activities in

order to offer better services to them and stimulating private and public sector investments.

Regional development issue began to gain importance after uneven distribution of growth among the regions of the country despite the fast growth brought by the rapid industrialization around the world and the emergence of huge imbalance among regions from economic, social and cultural perspectives. Participation of many countries in the competition of development following World War II caused an increase in imbalances within the country and tendency for regional policies increased particularly starting from the EU.

The concept of regional development has undergone major changes over time and many theories were produced on this subject. A part of these theories will be examined in order to see the evolution this concept experienced.

1.3.1. Neoclassical growth theory

Neoclassical growth theories are generally based on the thesis that the growth rates among countries or regions within the country would converge. The short-term increase in per capita income depends on capital accumulation and technological advancement in neoclassical growth theory developed by Solow and Swan (1956). The return of capital decreases, in other words, the contribution of the capital to the production decreases when the amount of capital increases. This only shows that the long-term growth will only be materialized by technological advancements and technology is exogenous in Solow model (Filiztekin, 2008).

Regional growth is a determinant of regional income, economic and social prosperity in this approach. Causal mechanisms in theory predict that per capita income between regions will converge towards an economically optimal balance point in the long-term (Pike et al., 2006).

There are two different types of convergence in the neoclassical growth model: absolute convergence and conditional convergence. All parameters, such as population growth rate, savings, etc., are equal in the absolute convergence model and the initially lower per capita income of a region will be balanced at some place by growing faster than the region with higher per capita income. In conditional convergence, each region grows towards its own steady state since the above-mentioned parameters, used in model among the regions, are not equal, but there are

differences among regions in terms of the level of income either in the short term or the long term.

The larger explanation about the model will be made in the relevant section since convergence analysis will be used in the analysis section of the thesis.

1.3.2. Cumulative causation theory

Gunnar Myrdal (1957) suggested that the economies of scale would lead to clustering of economic activities firstly in industrial regions. Moreover, he stated that the growth process would feed itself with the process which he called the cumulative causation growth (Dawkins, 2003). This process functions in the way of region becoming attractive for companies once the region begins to grow and the emergence of euphonies at serious rates as a result of the agglomeration of companies (Filiztekin, 2008). Less-developed regions can benefit from this situation by transferring innovations to a backward region and by spillover effect introducing a growing export market for the backward region. However, these procured acquisitions are in tendency to be stabilized with the flow of capital and labor-force towards the developed region. Free trade will result in a way that would cause further intensification of this process of cumulative causation (Dawkins, 2003) and will lead to an increase in wage gaps between regions.

Kaldor (1970) combined export-based development model and the concept of efficiency wage in the study by deeply examining the cumulative causation theory. As in Myrdal's model, the economies of scale provide a major advantage to the early industrialized region. An exogenous shock causes cumulative causation by quickly increasing the demand for an industrial good in the world. Although monetary salaries are the same in all regions, efficiency wages (monetary salary/labor productivity) are lower in the industrialized regions due to the economies of scale. Since the regions with lower efficiency wages will make more production, this will cause a further decline in these efficiency wages at a later stage and the growth will continue without being seized by any limit (Dawkins, 2003).

1.3.3. Growth pole theory

The most popular of regional development theories and the most commonly used in regional planning works is the growth pole theory put forward by Perroux (1950)

(Filiztekin, 2008). It refers to the relationship between companies and industries in its original form (Dawkins, 2003). The economic space originates from the sum that includes the networks of relations between a pioneering company or industry and its buyers and sellers, a field of forces in which these relations could occur and the reciprocal relationship of these forces with each other in the growth pole theory. This economic space is a growth pole. Growth goes into action by means of this pole and then spreads towards the periphery of this pole. In other words, the growth will take place through the mutual interaction of companies and over the externalities according to this model.

Growth pole theory was abandoned in the 1980s due to dissatisfaction caused by the failure when things put forward in theory were adapted to real life. Many of the policies created based on this theory failed (Dawkins, 2003).

1.3.4. Export base theory

Export-based development theory is a regional development theory built on “demand” that is the main pillar of Kernesyen approach. The growth differences between the regions in this theory were explained by the export growth rates between the regions. The region grows not as endogenously but as exogenously unlike the internal growth models that will be described below (Armstrong and Taylor, 2000).

It was put forward by Charles Tiebout (1956a, 1956b) and Douglass North (1955, 1956) in the 1950s. According to North (1955), the regional growth of local political, economic and social institutions is determined by the reaction of the region to the demand of outside world. This reaction leads to growth both in the sector where the goods subjected to export was produced and in other sectors whose only purpose is to serve the “basic” sector. In addition, there is no need for the region to be industrialized because exports of the region can be with agricultural crops or service-based products (Dawkins, 2003). The more revenues increase and the more demand begins to increase in the region began to develop with merchandise exports as a result of the demand from outside the region; while the increase occurring in production quantity grows exponentially both in the sector that produces the exported goods and in the sector that meets with the needs of the region, the engagement of external economies bears the result of widening the gap between the regions (Filiztekin, 2008).

In spite of being more simplified with the assumption (Filiztekin, 2008) that there was a lack of fluidity of resources initially owned by the region between the regions, the export-based development theory strongly reveals the importance of the influence of external demand for regional products and specialization in the growth of a region. International competitiveness of the export sector of the region determines its growth with regard to other regions. While the exports of the region, the income levels of other regions, the prices of substitute goods, the quality of goods and after-sales services determine the demand for export products; the costs of production factors also affect the competitiveness of the region by influencing the demands section (Pike et. Al, 2006).

1.3.5. Stage/sector theories

Stage theories, attempting to explain economic growth, dwell upon national and regional levels and sectoral variations. Countries and regions have been observed to move gradually towards from agricultural production to industrial production, from there to the service sector, ultimately to the knowledge economy and the more advanced levels of the development (Pike et. al., 2006).

Hoover and Fisher (1949) discussed the different stages of regional growth in their studies that could be called the first of sectoral change theories. Agricultural production is dominant and there is a self-sufficient economy in the early stages of regional growth. Manufacturers begin to specialize and to trade with other regions when transport facilities improve. The region enters into the phase of industrialization since the decreasing yields in mine industry or agricultural sector which the region initially produced will be in question. It specializes in export products in the most advanced stage. In this theory, the division of labor, materialized within the region, is seen to bring economic specialization in the economy that evolved from a self-sufficient economy to an export products-based economy (Dawkins, 2003). There are many researchers like Schumpeter (1934), Rostow (1956, 1977), Thompson (1968) and Pred (1977) who attempted to explain national or regional development with stage theories.

1.3.6. Profit/product cycle theories

Product cycle theories, put forward by Vernon (1966), explain the regional development and the gradual evolution of regional industrial structures with the aim

of selling export products in a good way. The companies do not pay attention to small cost differences between the regions in the early stages of their efforts to develop a new product due to the flexibility of low demand. In addition, the proximity to research-development companies becomes more of an issue for changes and innovations to be made to the product in the early stages of a product's manufacturing process. Large settlements are the most suitable places to produce a new product that is not yet ripen, in other words, yet to take its final state because of all these reasons. These needs, initially felt by the company, are reduced and the economies of scale begin to gain importance when the product begins to ripen and its standardization is maintained. The company may begin to employ cheap and low-skilled labor-force after the product became standardized and the less-developed regions begin to be preferred because of this reason (Dawkins, 2003).

Markusen (1985) put forward profit cycles theory after some criticism against product cycles theory introduced by Vernon. According to Markusen, the sectoral changes within regions correspond to one of the five "profit cycles" determined as originating from the structure of competition in various stages of product development. The companies make negative profit in the first stage that might be called the birth stage of new industry. In the second stage, the company, which develops the new product, makes super profit since it is in the monopoly position. The number and quality of people employed increase at this stage. In the third stage, the technology needed to product the developed becomes widespread enough to allow new companies to enter into this sector. At this stage, a significant decline is observed in profits made and "normal profits" begin to be made due to the entry of new companies to the market. In the third stage, either the process of oligopolization is completed and normal-plus profit is being made or profitability reduces due to high competition and normal-minus profit is being made. In the fifth and final stage, the sector heads for the last roundup and, from now on, losses begin to be made in this stage in a similar manner to the first stage.

1.3.7. Endogenous growth theory

Model's failure to explain the real life as a result of exogenously including production factors such as population growth rate, savings rate, human capital and technological change to earlier neoclassical growth models led to the development of

different theories (Pike et al., 2006). Especially Romer (1986, 1990) and Lucas (1988) pioneered a new theoretical development called endogenous growth models with their studies. These new models differ from neoclassical growth models in two ways: First, the internalization of technological development, in other words, inclusion of how technological development took place to the model, and hence, the explanation of income differences between the regions in the long term which neoclassical growth model fell short of explaining. The other is that there is no decrease in the return of the accumulable factors like capital (Filiztekin, 2008).

According to the first approach, if the technological level of development in a region or a country depended on the previous technological knowledge of that region, in other words, if the regions initially have higher technological knowledge and this knowledge increases faster, it is inevitable that there will be knowledge-accumulation differences between the regions and the regional developmental differences based on them. This approach is based on the assumption that technological knowledge is not transitive among the regions. In this case, a region, starting technologically behind other regions, will not be able to catch up with them.

The second approach is based on the lack of reduction in accumulable factors, especially the returns of the capital. External economies are used as explanatory in the first examples of endogenous growth models. The presence of external economies allows all kinds of flows and strategic complementarities between the companies and different points of equilibrium are achieved as a result of them. The occurrence of euphony between companies means that any innovation developed by a company in a region as a result of research-development activities is used by other companies and everyone generates more revenue in this way. The impulsion of research-development activities carried out by a company to force other companies to act in the same way, in other words, guiding them to find new products or production styles can also be given as an example of strategic complementarities. Referred in the literature as “AK-model” and the dependence of technological development on the amount of the total capital of all companies in the industry can be given as a good example for the increasing returns of accumulable factors. The amount of capital invested in the industry is a determinant of the pace of technological development in that industry. This will cause the company to obtain the same technological growth speed with other companies in the industry and its

capital returns to be higher regardless of the amount of its capital. If there are differences between regions in terms of capital accumulation in the beginning, the income differences between regions will also increase due to this kind of exogeneities (Filiztekin, 2008).

Staying out of regional growth model that suggested by Harry Richardson (1973) and include cluster economies and internal technical changes, internal growth models lately ignored the role of geography and space on regional growth and downsizing. Nijkamp and Poot (1998) established a framework that allows the regional (spatial) factors such as factor mobility between regions, spread of innovations and inter-regional trade by expanding Romer model. The inclusion of this kind of regional interactions in the endogenous growth models manifested that the empirical findings of the model would generate the result of being uncertain. Absolute convergence, conditional convergence and divergence are theoretically within the boundaries of possibility depending on the definition of the model. Apart from these, researchers, like Barro (1990) and Aschauer (2000), brought new perspectives by adding different factors to the endogenous growth models (Dawkins, 2003).

1.4. Regional Imbalance

1.4.1. Concept of regional imbalance

The concept of regional imbalance, which creates/comes to mean inequalities in economic and social dimensions between the regions of a country, dates back to the industrial revolution in consideration of its reasons and commencement. Acquiring currency worldwide mostly after the economic crisis of 1919, the regional imbalance emerges in the developed and developing countries in different ways and reasons. It can be considered as an impact of international capital due to being economically dependent on foreign-source in the developing countries, as a result of capitalism in the developed countries and as the unequal distribution of the development nation-wide (Özel, 2009).

If regional imbalance is characterized as all kinds of imbalance seen in various parts of a country, it can be said that regional imbalances exist more or less in every country today. Regional imbalance can be approached in a narrower sense in the form of economic and social inequality of opportunity. *Economic inequality of*

opportunity can be defined as “the inability of people in other regions to have equal opportunity either to find jobs or to earn equal wages for equal work.” *Social inequality of opportunity* is “the inability of people living in different regions to benefit from health services, education services, cultural activities in the same degree and even to have similar chances in mate selection” (Dinler, 2014).

Whether it is a developed or developing country, the regional imbalances in a country is divided into three groups according to their characteristics (Smith, 1971):

- i) Natural or geographical imbalances: They are the imbalances which are the direct result of natural resources and physical conditions. Regions with rich underground and aboveground natural resources, coastal and harbor regions can be more developed than other regions. Since these regions have this kind of superiority compared to their surroundings, the economic activities are concentrated here.
- ii) Economic or functional imbalances: Countries with imbalances in this respect gain different incomes due to the same production factors and market difference. On the other hand, differences in incomes may occur in case of shifting the labor-force from the agricultural sector to the industrial sector.
- iii) Social and cultural imbalances: This kind of imbalance, occurring due to dependence on educational level, also includes the differences between people’s behavior and value judgements.

1.4.2. Occurrence of regional imbalance

After the industrial revolution, the countries, which carried out the revolution, made a great progress in the short term and a significant different occurred between themselves and other countries in terms of the level of development. At the end of nearly two centuries from the beginning of the industrial revolution to the present day, the pioneering states of the revolution and other states that were exposed to the revolution and could not avoid being exploited were clearly distinguished, and formed two separate groups as *developed* and *developing*. Differences in development were not only between countries in this process, but also created significant differences between the regions within the country. It can be inferred here

that the basis of the regional imbalances emerging between the regions of the countries is based upon the industrial revolution (Dinler, 2014).

It will be seen that the development began in certain countries and certain privileged spots of these countries when examining the historical roots of regional imbalance. The economic development does not have a chance to start in all regions of the country, but starts as a result of coincidence in a particular area (these can be the geographical location of the region, rich natural resources found there or an unexpected invention) when considered it in all countries or on the basis of countries. Development concentrates around this area under the influence of powerful forces and begins to spread into the environment after this concentration reaches a certain level. There are two reasons for the development to concentrate around these regions: Economies of scale and external economies. Wishing to benefit from economies of scale at the maximum rate, companies enlarge their production facilities and make new investments. In this way, while they try to maximize the advantages they obtained, they also lead to an increase in the economic activities of the region they operate. Hoping to benefit from the advantages brought by the external economies, in other words, by the co-existence, businesses tend to accumulate in this region where the development started (Dinler, 2014).

There are different opinions on how the regional imbalance that arose in a country took a shape over time (Keleş, 2002):

- i) According to an opinion, regional imbalance is a part of the process of economic development and these imbalances will be reduced in line with the growth in the course of time.
- ii) According to another opinion, if any policy is not build up in response to the differences in development between regions, these differences will be further increased. According to this opinion traced back to thinker such as Myrdal, Galtung, Santos, and Amin, here the exploitation of the environment by a center comes into question. Since all the resources of the country will be flowing towards large cities and the developed regions, the backward regions will continue to remain the same. These backward regions will continue to stay behind unless the state intervenes.
- iii) Another approach in this topic approaches the issue in terms of developed and less-developed countries. According to this opinion, while regional

imbalances decrease over time in developed countries, they will continue to remain a problem in less developed countries. This opinion is based on J. Friedmann's study on "Polarized Growth Theory."

1.4.3. Changes caused by regional imbalance

Regional imbalances lead to some serious changes in demographic, social and economic terms. These changes can be listed as follows (Gündüz, 2006):

Demographic changes:

- The shift of dynamic and qualified labor-force around the less developed region to developed regions,
- The concentration of population in developed regions and the problems of infrastructure that result from it,
- Inadequate education and health services,
- The emergence of 'demographic urbanization' covering issues like the increasing number of slums,
- Increase in prices of goods and services in general, especially in prices of rent and homes as a result of an increase in population, etc.

Changes in social domain: If considered from the perspective of developed regions;

- Increase in literacy rate as a result of the proliferation of educational institutions,
- Spread of healthcare organizations and increase in the number of healthcare staff accordingly,
- Attainment of infrastructural investments by the villages in the region,
- Increase in transportation networks,
- Increase in per capita income level.

Changes in economic domain: If considered from the perspective of developed regions;

- All kinds of economic activity in the region encourage new investments,

- New businesses will be established and costs will be reduced in the region due to emerging external economies,
- Company and businesses in the region, which previously used old technology, renew themselves by being affected from the activities of company and businesses that use advanced technology, economic development will be further accelerated as a result of new technology and production methods,
- Agriculture-based economic structure will shift to industrial sector and the hidden unemployment in the agricultural sector will descend to the lowest level over time.

1.5. Regional Development Policy

Should any intervention be made for the removal of imbalances between regions emphasized in the previous section? If this question is considered from the perspectives of neoclassical economists, it seems that the opinion of state need not interfere with the economy in any way and the market will be equilibrated again by an “invisible hand” is dominant. However, the suspicions were awakened as a result of the empirical studies on the validity of assumptions made a base by neoclassical economy for this thesis. The understanding of the consequences that will arise in case of abandonment of these assumptions by the help of mathematical models in recent years led to the strengthening of the thought on the necessity of making intervention (Filiztekin, 2008).

Regional development policy, whose basic objective is the elimination of social and economic differences in the country, is divided into two as traditional and modern. According to the traditional view, large investments must be made to large companies which are seen as the main actors and these companies should introduce new fields of work. According to the modern view, human capital and investments must be channeled to small and medium-sized enterprises which are considered as the development potential of the region and these companies should generate production surplus with the innovations they will make (Ivanisin, 2004).

There are some principles, purposes and instruments of regional development policy.

1.5.1. Principles of regional development policy

It is necessary to follow a policy aimed at developing the backward regions in order to eliminate regional imbalances. Three principles of such a policy, which can be listed as *social profitability*, *development poles* and *public involvement*, can be mentioned here (Dinler, 2014).

Social profitability principle: It is necessary to make investments with high “social profitability” that will meet with vital needs of backward regions, but also ensure the commencement and continuation of economic development in these regions by the state or public institutions connected to the state. Thus, the state will contribute to the development of the region by these investments which will be ignored by the private sector since they are not profitable in the short term, but will yield economic benefits in the long term. Today, the modern state perception is to increase the welfare of the public, and therefore, social benefit is always preferred to private benefit. State should deliver productive investments that will bring economic and social vitality to the backward regions together with infrastructure investments there. It is impossible to speak of regional development policy without this intervention of the state in these backward regions (Dinler, 2014).

Principle of artificial development pole: The creation of artificial development pole, which is a result of social profitability principle, can be said to be the defended second principle of regional development policy. According to the above-mentioned *development poles* theory, developments in a country begin in regions that are advantageous in certain aspects. Once the development begins in these regions, economic activities accumulate around this region and it gains a sort of the identity of development pole. Today, with the commencement of economic development in certain spots, the opinion of creating development pole horizontally became widespread not only in developed countries, but also in backward regions in less developed countries. Here, the most important point that should be considered is that the investments must not be made in all sectors, but must be made in sector whose development may be faster depending on the nature of the region (Dinler, 2014).

Principle of public involvement: Principle of public involvement, representing the inclusion of the public to regional development planning, is the third principle of regional development policy. Regional development policy depends only on the

activeness of local people in policies, in other words, on the unity of social and economic environment. The participation of people to planning will strengthen the sense of unity at all levels and bring vitality into regional development policies. Local people can participate in regional development activities through various non-governmental organizations and professional associations (Dinler, 2014).

1.5.2. Objectives of regional development policies

The objectives of regional development policies can be expressed in various ways. Some of them can be listed as follows:

- The reduction of regional imbalances,
- Facilitating the distribution of all kinds of resources, economic activities and population between regions in a harmonious way,
- Utilizing potentials of the region,
- Spreading the development all over the country,
- Regional development,
- The promotion of healthy growth in regions,
- Ensuring a consistent distribution of industry in the region,
- Directing a fair share of the country's economic development to backward regions.

However, the most obvious indicator of regional imbalance is the concentration of country's population and economic activities in a particular region. Therefore, the most important objective of regional development policy for the removal of regional imbalances should be the distribution of population in the country in a rational way and ensuring the economic and social development of backward regions (Dinler, 2014).

1.5.3. Instruments of regional development policies

Four instruments which the regional development policy can use for the correction of economic imbalance between the regions can be mentioned here. They can be listed as follows:

- Firstly, channeling economic activities to backward regions with certain incentive schemes,
- Realization of public investments required for regional development,

- Ensuring the compliance of administrative organization with the issues of regional development,
- Limiting the development of metropolitan regions.

Incentives: State may determine a number of financial and tax incentives that will attract private enterprises to the less developed regions in order to achieve the above-mentioned objectives of regional development (Bayraktutan, 1994). Incentives should be differentiated according to sectors, locations and the developmental levels of provinces (Kaya, 2009).

Major financial and incentive measures include: There are certain criteria that must be followed in order to achieve the expected results from the incentives such as development and incentive funds, interest-free or low interest loans, state guarantees and investments, customs exemptions, deductions and installments in customs duty, tax refund in exports, special export fund, etc. Incentives should carefully be given to the projects with higher possibility to be successful after creating a suitable environment and bringing the accumulation of social infrastructure to a certain level. Social and economic stability should be maintained in the meantime and efficiency should be ensured in tax management (Bayraktutan, 1994).

Implementation of public investments necessary for regional development: It is the duty of the state to raise people's welfare and to make it permanent. The most important share in the elimination of imbalance between regions again belongs to the state. The state can implement the public investment policy in order to eliminate these differences (Yilmazer et al., 2006). Public investment is divided into two as *productive public investments* and *infrastructure investments* required for the development of the region.

The state may provide additional purchasing power to the region that fell behind with regard to other regions by transferring more funds than tax income it derived from that region. An economic revival will begin with this additional funding provided in the region, its production capacity will be increased by the public investments, its deficient or ruined infrastructure will be completed and the region will be a more attractive place of investment for entrepreneurs (Bayraktutan, 1994).

Ensuring the compliance of administrative organization with the issues of regional development: It is usually difficult for the administrative organization in commission

to comply with the requirements of this policy in a country after the regional development policy being implemented. Regional organization should be resorted and, if necessary, administrative reforms should be carried out in favor of preparing regional development plan and its implementation in a favorable way. Meanwhile, it is useful to attempt to improve the financial means of the administration and the quality of personnel, and, on the other hand, to seek for the way to implement the regional development policy with private institutions outside of traditional administrative framework (Bayraktutan, 1994).

Limiting the development of metropolitan regions: It is quite difficult to bring municipal services to people living in large metropolitan areas located in developed and developing countries. In the meantime, these regions are substantially faced with environmental pollution. Production costs begin to rise under the influence of external economies at one point in these regions harboring significant advantages for the companies in the initial phase of development. As a result, the life gets critically difficult for the people living in this region and the employers experience the loss of productivity.

Although the migration of people living in backward regions to large metropolitan areas was prevented as a result of the policies implemented, the problems of these metropolitan areas still continue and various measures need to be applied for the reduction of these problems. These measures can be listed as follows (Dinler, 2014);

- Keeping the population in rural areas,
- Implementation of visa or tax during the entry to the big cities,
- Transfer of some of the activities taking place in the metropolitan areas to backward regions,
- Distribution of the population in large cities by creating satellite cities or new cities.

CHAPTER II

REGIONAL IMBALANCES IN TURKEY

Socio-economic differences, inherited from the Ottoman period, increased even more since the founding years of the Republic. These differences, which are undesirable both economically and socially, generate some important results. In this section, the causes of existing differences between regions in Turkey, works done to eliminate these differences and to what extent these differences are will be presented through some socio-economic indicators.

2.1. Reasons for the Emergence of Differences between Regions in Turkey

Even though economic development began especially in some countries with the industrial revolution, this prevailed not in all of these countries, but only in some regions. Therefore, the regions, where the economic development started, developed more quickly than other regions and differences emerged between regions. This applies to each country in the stage of economic development. Since the regional differences are unavoidable phenomena, states are required to carry out some policies in order to reduce these differences.

Although there is no difference in this phenomenon in terms of Turkey, some factors are seen to take part in the emergence of differences between regions. These reasons can be examined under three headings including geographical, historical and cultural.

2.1.1. Geographical Reasons

It is a recognized reality that geographical factors (climate, underground resources, natural conditions, transport and communication facilities, etc.) created either a restraining or stopping effect in the development of the country. Some interesting results emerged when examining the geographical situations of the developed or developing countries. All other developed countries, with the exception of Australia, are located in the northern hemisphere. Even though the developed and industrialized countries are located in geographies that experience the four seasons, the less

developed countries are located either in very cold or very hot climate zones (Dinler, 2014).

It is an undeniable fact that the geographical factors that emerged in Turkey have significant impact on the regional differences. The East Anatolia Region can easily be seen to be more disadvantaged compared to other regions when examining the distribution of geographical factors, such as vegetation, climate, altitude and surface features, etc., between the regions (Gündüz, 2006).

The East Anatolia Region, whose average height is between 1800 and 2000 meters, is the most mountainous and highest region of Turkey. It is the region with the severe climate as a result of this altitude. While the winters last longer, the number of frosty days ranged between 113 and 118 and snow-covered days were between 62 and 153 days. The summers are shorter and pass quite warm. The temperature difference between summer and winter seasons is far too much for this reason. Vegetation remains also quite poor as a result of the altitude and climate of the region. Also, a large part of the region is not conducive to agriculture (Yılmaz, 2001). In addition to this, a large amount of mountainous areas in the region and its high altitude cause the transport opportunities to be quite limited.

What kind of effects geographical factors generally reveal between regions in Turkey will be displayed more clearly in the next pages of the section through variables such as income, population density and industrial statistics.

2.1.2. Historical Reasons

The origin of regional differences in Turkey dates back to the 16th century in which the Ottoman Empire ruled. The Empire implemented the regime of mir'î lands (state lands) very well from the period of its establishment until the mid-16th century. Both agricultural production was organized very well together with this regime and a very strong army (state troops), which ran from one victory to another, was invented depending on this regime. A settlement order, ranked as capital city, regional centers, market towns and villages, was created in accordance with the Ottoman perception until the 16th century. Regional centers, placed at regular intervals, were located at the intersection of trade routes and the population of these regions was almost at the same level in this settlement order. These regional centers also assumed social service functions in addition to their identity as being cultural centers. Most

importantly, there were no significant differences among these centers (Dinler, 2014).

Major changes occurred in the fighting techniques in favor of firearms with the industrialization movement emerged in Europe after the 16th century. The Ottoman Empire, which had to adapt to these new weaponry techniques, created an army that constantly engaged in firearms training. The mir'i lands, which were previously given to state troopers, began to be given to taxmen as a result of this. The peasants, who worked in these lands and felt themselves safe, fell in to unfavorable situations with the breakdown of this regime. In addition to these changes, Jalali Rebellions (1607-1648) broke out due to large price rises and population boom experienced during that period. Villages were invaded and robbed for 45 years. The peasants, overwhelmed by these rebellions, either settled in remote places where they would not be found easily or migrated to big cities. A major problem of unemployment emerged as a result of this (Dinler, 2014).

The Ottoman State was flooded with the fabricated products manufactured in Europe and the regional economies, based on handicrafts, steadily declined with the agreements signed in 19th century. Port towns, which gained significance due to entry of these products imported from Europe into Anatolia, profited better from this system than other regions. Thus, the differences between the regions in Anatolia began to emerge with further revitalization of the Western Anatolia and coastal cities and the decline in economic importance of the Eastern and Southeastern Anatolian cities (Tekeli, 1972).

Addressing the differences between the regions of Turkey briefly in the early years of the Republic is important as it will provide a powerful insight into the origin of the problem (Dinler, 2014):

- During this period, Turkey's population was 13.6 million people according to the first census carried out and 1.1 million of this population was located in Istanbul. The majority of the population lived in small places of settlement such as towns, villages and hamlets whose numbers exceeded 70.000.
- Transport system was extremely primitive and insufficient. A large part of the railways, funded by the companies with foreign capital, was in the Western

Anatolia. Highways were in poor quality, far from meeting with needs and were in no position to allow a healthy transportation.

- Although 80% of people in the last years of the Ottoman State were engaged in agriculture, an extremely backward technology was being used. Production, just enough for the region, was being made in the East and Southeast Anatolia regions due to infertility of soil, inefficiency of transportation facilities and distance from the production environment for markets. Totally adverse situation was in question in the Aegean and Cukurova regions and this was reflected in the economic situation in the region.
- In 1915, from a total of 282 enterprises, 155 enterprises were located in Istanbul, 52 of them in Izmir, and the remaining 65 were in other provinces according the industry census conducted in 8 cities of the Western Anatolia. As can be understood here, while the existence of industrialization, even if slightly, could be mentioned in the Western Anatolia in the first quarter of the 20th century, no such existence can be mentioned in other regions of the country (Dinler, 2014). Only 8% of all industrial enterprises in the country were located in the East and the vast majority of them were state-led investments according to the industrial census conducted in 1939 (Gündüz, 2006).
- When examining per capita national income in 1907, while it was 1970 cents in Istanbul and Catalca, it was 990 cents in Marmara, Aegean and the Mediterranean and 667 cents in the Central and Eastern Anatolia regions respectively.

As can be seen from the figures given above, the foundation of differences existing between the regions in Turkey today can be traced back to the last periods of the Ottoman State and the early years of the Republic.

2.1.3. Cultural Reasons

The tribal structure, ongoing in the East and Southeast Anatolia regions since the Ottoman State, still maintains its importance, production and human relations in the region are shaped accordingly and this structure (land-lordship, sheikhdом, clan leadership) also affects the way of life. It proves to be effective in shaping the

economic and social activities. In addition to this, the literacy rate is still lower in these regions compared to other regions. Policies, aiming to increase the education level, should be pursued for the development of these regions when considering the relationship between education and industrialization (Gündüz, 2006).

In addition to the reasons stated above, the problem of terrorism, which has been continuing nearly for 40 years in the Eastern and Southeastern regions, remains as a serious obstacle against the development of these regions. No investments were made in the region by the private sector due to terror problem and the investments, made by the state, do not prove to be effective enough.

2.2. Policies to Minimize the Differences between Regions in Turkey

Inter-regional differences, which emerged in the last period of the Ottoman State and became a major problem in the early years of the Republic, continued to increase during the Republican era. No serious policies were observed for the reduction of these differences until the periods of developmental plans that began in the 1960s. The liberal policies that were previously employed were abandoned and the Industrial Plan Period, covering the years 1933 and 1939, was adopted following the 1929 economic crisis. The policy of disseminating the factories of the State Economic Enterprises until the East Anatolia was pursued during this period. However, these policies failed to reduce the developmental differences between the West and the East. A policy of “a factory for each province” was adopted between the years 1950 and 1960 in order to reduce the regional differences. Many public economic enterprises (KIT) were established in the East and Southeast Anatolia Regions during this period. However, since the not efficiency but the political opinions were taken as the basis, in the establishment stage of these enterprises; they did not only fail to reduce the problems of the region, but also became burden to the economy (Dinler, 2014).

The role of regional policies within the Development Plans, also called the planned period, implemented from 1960 until today will be analyzed in this section.

2.2.1. First Five-Year Development Plan (1963-1967)

The execution of regional plans can be valid on the condition that they should not be independent from national development policy in the first five-year development

plan (FYDP). One of the most important points in this plan was the determination in the way of initiating from the centers with the highest development potential for the development of backward regions. The idea of creating poles of development, mentioned in Section 1, was adopted in this way. In addition, the necessity of the reorganization of public investments was emphasized in order for regions to benefit from public investments in a balanced way (Dinler, 2014).

The objectives of regional policy that were defined under three main headings in the plan can be summarized as such (DPT, 1963):

- i) To keep the principles of a balanced inter-regional development in mind in making investments for ensuring a balanced income distribution by dispatching population proportionately with resources and economic works as well as in geographical distribution,
- ii) To improve the overall efficiency by assigning resources primarily and a very large degree to growth points where the highest economic and social productivity will be achieved,
- iii) To remove regional policy objectives and imbalances between regions as stated goals and strategies of the plan and to provide the more rapid development of backward regions.

It was mentioned that Turkey's regions created three groups following these objectives. They are defined as potential development regions, backward regions and metropolitan regions.

There was an emphasis on the potentials of some regions in 1st FYDP that specifically referred to the effective use of national resources in order to accelerate economic development and to ensure the occurrence of a more balanced economy as a result. In this regard, regional development plans were put into practice in 1960s for leading sectors in regions such as the East Marmara, Antalya, Cukurova and Zonguldak. There were different leading sectors of each of these regions. Agriculture in Cukurova, industry in Zonguldak and the East Marmara and tourism in Antalya were leading sectors. The negative aspect of this plan was that the project's implementation was only under the control of the central government, in other words, the local stakeholders were not included in plans (Göymen, 2005).

A contrary situation was observed in practice despite the measures taken in order to develop backward regions in the 1st FYDP. The investments made in the manufacturing industry to the developed regions remained far above than those made in less developed regions. While the investments made in developed regions constituted 82% of total investments, this rate was around 18% in the less developed regions (Gündüz, 2006).

2.2.2. Second Five-Year Development Plan (1968-1972)

The service-providing investments of the public sector in 2nd FYDP would be made by directing them to the masses that cannot benefit adequately from these services and by giving priority to the least developed regions where these masses are intensely present. As in the 1st FYDP, there was a mention of giving priority in development to the centers having the potential to grow rapidly in the less developed regions. Thus, there was a focus on the development points that obtain power to develop by themselves and affect their environments.

It was stated that the possibility of making economic public investments in the less developed regions would be focused in order to direct economic activities to these regions and the incentive factors would be increased for having private sector investments be made in these regions. For this purpose, it was noted down that special loan facilities, tax deductions and all the infrastructure would be channeled to organized industrial zones prepared, the cheap energy facilities would be provided there and guidance would be given to those would invest in these regions (DPT, 1967).

The utilization of regional planning as an effective tool was mentioned and what the principles, state of this planning and the policies to be applied were stated in the 2nd FYDP period in order to implement this regional development policy. Regional planning principles were as follows (DPT, 1967):

- i) The regional planning will be benefited in accordance with regional development, urbanization and settlement policies described in the relevant section of the development plan and by ensuring its consistency with the principles and policies of the 2nd FYDP.
- ii) The developmental power of Turkey's region will be determined by giving priority to the less developed regions with regional planning works

and the preferences that would yield the greatest benefit from that investment will be made in selecting the location of investment decisions.

- iii) The identification of growth points, which will be supported as the attractive power of the regional development and where the urbanization rate will be high, will be given priority in the less developed regions.
- iv) Regional settlement plans, which guide the sector activities and organize the urban settlement, will be prepared with the purpose of aiding the development of the economic and social activities of the regions in an orderly manner, making savings especially in infrastructure investments and the distribution of services and preparing opportunity for the industrial development.

Although these policies pioneered the development of various branches of industry in the country, they also brought about unemployment due to the capital intensity of investments. As a result of this, the migration from rural areas to urban areas increased further and the difference between the east and west of the country was further intensified (Göymen, 2005).

Because of this situation, 23 provinces in the East and Southeast Anatolia (Aydın, 1999) were approved as the Priority Development Regions by a decision of the Council of Ministers in 1968. After this date, the public investment and incentives were moved from growth centers to villages. The biggest problem here is to determine these regions again by the central government not by economic concerns but by political motivations and not to include any local stakeholders (Göymen, 2005).

Some inspiring incentives, specific to villages, were presented. One of them is to reduce the amount and values in export undertaking by half with regard to normal regions taken while giving tax, photo and fee exemption fee in export-guaranteed long and medium-term investment loans for encouraging businesses that would make investments in the East and Southeast Anatolia Regions. Another incentive is related to the difference in interest payments in medium-term loans. While it is required to supply at least 40% of total investment by the equity capital of the investor in the investments carried out in normal regions, this rate is 20% in villages (Gündüz, 2006).

2.2.3. Third Five-Year Development Plan (1973-1977)

The ideas of region and regional planning were abandoned and instead the concept of “zone” was used in the 3rd FYDP. The need to develop all backward zones was emphasized regardless of whether or not these zones were located or not in the less developed or developed regions. Although this approach is a flawed approach, the idea that backward regions needed development more in our country where the differences between the regions were much more and turning towards these regions in a more efficient manner should be abandoned. The idea of village is more suitable for countries with a lower level of differences between the regions. If we consider it from this perspective, the 3rd FYDP became a plan in which those made in the previous two plans in terms of regional planning were all destroyed (Dinler, 2014).

It was mentioned in the 3rd FYDP that some zones of the country was economically, socially and culturally backward and the determination of these zones with the exact geographical boundaries would be beyond possibility. As there would be an undeveloped zone within a developed region, the opposite is also possible. It also makes mention of the creation of necessary organization in DPT in order to provide advice on the regulation of investment, to conduct necessary research, to establish their relationship between plans and programs, to monitor and to evaluate the implementation by taking these zones into consideration in terms of national planning (DPT, 1972).

In addition, it was also stated that the priority zones of development would be guided towards the objectives of long-term development in the subjects they have the potential for and economic and social development would be provided within the principle of national unity. The priority zones of development will be developed by the complementary measures based on the phased program within an approach that include (i) Natural resources, (ii) human resources, (iii) urban stratification, and (iv) dimension of transportation and communication networks, aim at economic and social integration and does not divert the balance of the national at sectoral level (DPT, 1972).

The regional politics and development lost their importance in this plan. The idea that the attempt to eliminate regional differences within a short time will result in the distribution of resources in a non-economically efficient way and this will slow down

the accumulation of capital and the national development was the reason for the change in this policy. Therefore, providing incentives to the private sector was resorted instead of making public investments directly to the backward regions (Göymen, 2005).

The most important contribution of the 3rd FYDP to regional development is that statement that the problem of regional differences will be able to be resolved by using only regional resources and strengthening local governments. This vision remained in the main axis of regional policies made henceforward (Göymen, 2005).

Some incentives were given to backward zones and plans were prepared also in this period. In 1977, funds were transferred from the grant that was put into the DPT budget called “balancing transfer related to villages” to the projects such as “development of Kars animal husbandry, project on the reduction of sensitivity against the drought in the Southeast, and project on the short-term solution to the problems of Hakkari animal husbandry.” In addition to this, Corum-Cankiri Rural Development Project, regarded as one of the less developed regions, was prepared and was financed by the World Bank (Gündüz, 2006)

2.2.4. Fourth Five-Year Development Plan (1979-1983)

The effectiveness of the policies predicted to reduce the differences between the regions in previous plans was discussed in the 4th FYDP and it was concluded that these plans did not decrease the regional differences, but rather increased them further. It was stated as reasons for these that the organization and institutionalization, which will make regional planning and ensure horizontal coordination, are not created with sufficient administrative and technical power and no regional development plans, except for a few tentative examples, were prepared. No new or positive solutions were offered although despite the emphasis of this fact (DPT, 1977).

There was a mention of preparing large projects with the purpose of ensuring the rapid development of backward regions, especially the East and Southeast Anatolia Regions under the heading of priority zones for development. Again, it was also mentioned that new laws will be made in the name of increasing agricultural and livestock activities in the East and Southeast Anatolia Regions and comprehensive projects in order to address these areas will be put forward. It was stated that the

public investments will be transferred to backward regions at a higher rate (DPT, 1977).

The policies predicted under the sub-heading of the Regional Development Policies of the 4th FYDP are as follows (DPT, 1977):

- All of the facilities will be used in the elimination of problems that arise in terms of the relative underdevelopment of especially some regions and the integration of planning decisions with the space will be ensured.
- Incentive measures will be used in the direction of eliminating the uneven distribution of industry between the regions.
- Co-operation between various public organizations and private sector will be maintained at every stage of these regional works aimed at the integrity in the development of the country.
- Measures ensuring the investment of the local capital in backward regions to these regions will be taken

During this period, the improvement of transportation networks between the regional centers was planned in the name of ensuring the integration between the East and Southeast Anatolia Regions with each other and the other parts of the country. Again, according the 15 region division made by DPT, the most invested regions in the period of this plan were Izmir 4th region, Istanbul 1st region and Ankara 5th region. The most invested regions in terms of per person investment were Sivas 10th region and Gaziantep 12th region. The education services per person investments in the less developed regions made an increase again during this period (Gündüz, 2006).

2.2.5. Fifth Five-Year Development Plan (1985-1989)

There was a return to the regional planning abandoned in the previous two plans in the 5th FYDP where the concept and principles of Priority Zones of Development maintained to a large extent. Another feature of this plan was the utilization of functional regions that was not used in any of the previous plans and was determined by taking mutual properties, service, human and news flows of the settlement units as basis. These regions were in the form of 16 region division determined on the basis of the study conducted previously called “the stratification of settlement centers in Turkey” (Dinler, 2014).

Regional policies were included under the headings of “Regional Planning” and “Priority Zones of Development” of this plan. According to this, there was a mention of making regional plans with the purpose of accelerating development and ensuring the effective use of resources in the regions that develop economically and those with potentials in terms of certain sector (DPT, 1984).

Unlike the previous plans, it was stated that the establishment of businesses (lightweight construction elements, animal-based products, etc.) manufacturing goods sensitive to transportation costs especially for the Middle East market will be ensured and be encouraged in the East and Southeast Anatolia Regions (DPT, 1984).

There was an emphasis on the implementation of incentive measures at different rates and scopes as of sectors and priority provincial groups and the delivery of energy and infrastructure that will be needed in the investments in sufficient measures and time by the government in order to obtain the desired results from incentive measures. In addition to these, the provision of business loans to the manufacturing enterprises to be established in the less developed regions and the use of low-cost loans by bringing the practice of tax, stamp and fee exemption to these loans will be ensured (Gündüz, 2006).

2.2.6. Sixth Five-Year Development Plan (1990-1994)

The regional planning, based on the regional division, was abandoned in the 6th FYDP unlike the previous plan and there was a mention of making some plans on the basis of region and sub-regions in order to conduct more detailed work for zones. Another distinctive feature of this plan was that it paid attention to the purpose and implementations observed in the regional policies of the European Community (EC) during the determination and implementation of regional development policies (Dinler, 2014).

The most discussed topics in the principles and policies section of the sub-heading of “Regional Development” included under the heading of “Regional and Zonal Development” of this plan can be summarized as the problems encountered by the metropolitan regions with the policies to be implemented for the development of backward regions and things to be in response to these problems. In addition to this, a great importance was paid to the planning of organized industrial zones and the

establishment of centers that will provide in-service training for employees (DPT, 1989).

Principles in the previous plan were also adopted in the same way under the heading of “Priority Zones of Development.” In addition, the establishment of a research center under the organization of one of the universities in the region was proposed in the name of developing suggestions to the regional problems and solutions related to them. It was also stated that the importance would be given to the development of border trade at the customs gate (DPT, 1989).

The villages were rearranged during this period and the number of provinces was raised to 35 with the addition of Ardahan and Igdir which gained provincial status. Public investments made in these regions increasingly continued in this period. The public investments made in villages of 1st degree increased to 2.5 million TL in 1991, 3.5 trillion TL in 1992, and 7.4 trillion TL in 1993. The investments made to all of the villages for the years 1991, 1992 and 1993 were 6.2 trillion, 8.2 trillion and 18 trillion TL respectively. There was also a significant increase in the investments made in the GAP Region during this period. Çorum, Malatya and Mardin organized industrial zones were completed in 1992 and the investments for OSBs in Çankırı, Elazığ and Erzincan continued (Gündüz, 2006).

2.2.7. Seventh Five-Year Development Plan (1996-2000)

It was stated in the 7th FYDP that the imbalances between the regions still remained and this appeared as an important problem despite the positive progress for the development of backward regions with the village policies that began to be implemented before this plan and the reduction of differences between the regions. In addition, it was also indicated that the terrorist attacks, occurred especially in some of the provinces in the East and Southeast, caused social unrest, prevented new investments and made the operation of existing facilities difficult. The internal migration increased as a negative result of this situation and this adversely affected the development activities (DPT, 1995).

It was observed that the signal for the regionalization of national plan was given a place while describing the current situation in regional development with the statement that “the different potentials and features of each region located in the

whole of the country necessitated the concept of a new planning in which the sectoral preferences and spatial analysis were discussed together” (Dinler, 2014).

Although all of the policies to be implemented for regions were included in short paragraphs in “Regional Development” section under the heading of “Objectives, Principles and Policies” of the plan, the explanations were deprived of a system. One of the most important headings in this section was in the way that “it is the main objective that the development, which constitutes a unity with its economic, political, social and cultural dimensions, should be in the quality to strengthen the national unity” and it was stated in confidential manner that the differences between the regions began to pose a threat for the national unity. In addition, the indication of taking the ecological balance into consideration in the preparation of regional plans was the first reference to the concept of ‘sustainable development’ in development plans (DPT, 2005).

Zonguldak-Bartın Development Project was also mentioned in the 7th FYDP in which the actions to be taken with regard to Southeast Anatolia Project (GAP) that began in 1981 were all addressed and it was highlighted that it would be carried into action during this plan. In addition to this, the foundations of important projects such as the East Black Sea Regional Development Plan, the East Anatolia Project and Yesilirmak Basin Development Project, were laid within the period of this plan (DPT, 2005).

Finally, a heading was opened under the title of “Legal and Institutional Regulations” that was never mentioned in any of the previous regional plans and legal regulations that will be put into force in relation to regional plans prepared were mentioned (DPT, 2005).

There were 90 Small Industrial Sites whose constructions were completed and put into service in the villages of 1st degree. 17 KSS were put into service in the context of the Southeast Anatolia Project. The establishment of 195 KSSs was proposed in the investment program of 1997. Seven of them are located in villages of 1st degree. In addition to these, 36 OSBs were completed and the establishment of 168 OSBs was proposed in the investment program of 1997 (Gündüz, 2006).

2.2.8. Eighth Five-Year Development Plan (2001-2005)

There was no mention of regional planning and villages in general way unlike other development plans in the 8th FYDP and some projects that began to be implemented and will begin in backward regions were explained with statistical information. Again, unlike the previous plan, the current situation and things to be done were presented in a more organized manner in five sections under the heading of “Regional Development Goals and Policies” (DPT, 2000).

The following were stated in the 8th FYDP in addition to the things mentioned in other plans (DPT, 2000):

- The works necessary for the harmonization of regional development policies with the EU policies should be accelerated
- Supporting activities for education and consulting services, R&D and technological support, the development of entrepreneurship will be focused in the creation of new industrial centers and accelerating the process of sectoral specialization.
- The implementation of Sample Industrial Sites will be initiated in the name of disseminating medium-sized enterprises in addition to the practices of Organized Industrial Zones and Small Industrial Sites that serve an important function in the creation of new industrial centers.
- A modern and effective form of management will be put into practice for the needs of metropolitan cities.
- The works on making Istanbul an international metropolitan city for trade, finance, tourism, culture and art will continue.

An investment of 14 billion TL was spent on the GAP, whose total amount of investment was 32 billion TL, from the moment of the plan’s preparation until the present. The growth rate of the region in the agricultural sector rose over the country’s average by means of the GAP. The GAP Social Action Plan was prepared in order to find solutions to the social structure and problems of the region besides the financial investments made. In addition to all these, Entrepreneur Support and Guidance Centers were established in order to provide guidance to domestic and foreign investors wishing to invest in the GAP Region (Gündüz, 2006).

In the name of revealing the potential of the East Anatolia Region, the Eastern Anatolia Project Master Plan, which comprises all economic and social sectors, shows homogeneity with 14 provinces located in the East Anatolia and covers Gumushane and Bayburt provinces, is being prepared. In addition, the East Black Sea Project, covering seven provinces located in the East Black Sea came to its final stage of preparations (Gündüz, 2006).

2.2.9. Ninth Five-Year Development Plan (2007-2013)

The effects of new conditions that appear before us with globalization on the issue of regional development were mentioned in the 9th FYDP. These effects are described as “turning into competitive units by themselves under the conditions of global competition, the cities and regions have the chance to catch a faster development trend within the appropriate strategies that evaluate their dynamics and potentials by carrying out good governance models that add all sectors to the process of development.” Some changes that were carried out and will be carried out in the harmonization process with EU regional policies were mentioned in addition to this. In this context, it was stated that the statistical classification of regional units (İBBS, İng.: NUTS), which ensures the collection of regional statistics and the creation of comparable statistical database compatible with EU regional statistical system, was made in three levels in 2002 (DPT, 2006).

New incentive measures were introduced with the purpose of increasing the contribution of the private sector in regional development. In this context, the practice of incentive, which entered into force in 2004 and initiated in 35 provinces, was extended to 49 provinces with an amendment to the law in 2005. On the other hand, the works on GAP, DAP, DOKAP, ZBK and YHGP, which began in previous periods, still continue during the 9th FYDP period (Dinler, 2014).

During this period, the most important project, which was made for regional planning, was the establishment of Regional Development Agencies in 26 regions located in NUTS-2 level. Investments to be made in each region and initiatives that will be put forward through these agencies will be evaluated and supported in accordance with the dynamics of that region (DPT, 2006).

Attraction Centers Support Program began to be implemented in Diyarbakır, Erzurum, Şanlıurfa and Van for preventing the population to turn towards major and

metropolitan cities and turning some important cities at the center and east of the country into importance attraction centers during the period of this plan. In addition to this, the regional plans were prepared and financial and technical support programs were implemented in the coordination of the Regional Development Agencies (DPT, 2006).

2.2.10. Tenth Five-Year Development Plan (2014-2018)

The goals and objectives in the 10th FYDP were defined as ‘ensuring the more evenly spread of welfare across the country through the regional development policies by reducing the regional developmental differences on the one hand and, on the other hand, by increasing the contribution of all regions to national growth and development to the maximum level by assessing their potentials and increasing their powers of competition

Major policies, included in the plan and planned to be implemented, can be arranged as follows:

- The Regional Development National Strategy (BGUS) will be put into effect in order to determine priorities and objectives at national level from the perspective of regional development and competition, to strengthen the harmony between spatial development and socio-economic development policies and to establish a general framework for the sub-scale plans and strategies.
- Economical activity branches in low-income regions should be diversified and KOBİ and micro-enterprises should be developed.
- Transportation networks, which will connect metropolitan cities, production centers and tourism cities to one another, will be strengthened primarily along with north-south transport corridors.
- The specialization of industrial centers will be supported in the areas where they have competitive advantage.

The participation of NGOs in the decision-making process will be enhanced in order to increase their contributions to local and regional development.

2.3. Regional Development Plans and Projects

Many regional planning works have been carried out in our country for problems of the regions and in the name of revealing their potentials. A few of these works initiated prior to the planned period, continued to be implemented during that period and yet some of them began their planning and put into practice in the planned period especially in 7th and 8th FYDP periods.

The first regional plan in our country, in this sense, was the Antalya Regional Project launched in 1959 even before the establishment of DPT. This project was carried out with the aim of developing the coastal areas by using irrigation facilities. The reason for selecting Antalya in the project was being a potential area of development. Gaining experience for planning works to be carried out in other region was included among the objectives of the project in addition to the regional development. This project, whose planning was being made until 1965, was finalized in this year and has not been sufficiently implemented (Dinler, 2014).

Other works conducted prior to the planned period were the Marmara Region Project which began in 1960 and concluded in 1964 and carried out with the aim of preventing excessive urbanization especially in Istanbul province and guiding the growth of the city by regional planning; Zonguldak Regional Project which was prepared between the years 1961-1963 with the aim of examining the possible effects of the second iron and steel factory to be set up in Ereğli; Cukurova Regional Project which was prepared in Cukurova Region that has the most fertile agricultural lands in our country with the aim of ensuring the development of more intense commercial and industrial activities that were based on the current agricultural production and finally the Keban Project which was formed for the sake of resolving problems that might be caused by the Keban dam. These projects have not had the possibility of being transported into practice in the end (Kulaksız, 2008).

There are also regional plans whose projects were prepared and implemented in the planned period apart from the above-mentioned regional planning works. Prepared with the aim of both particularly developing the locality of their implementation and the whole of the country, the most important of these projects are integrated projects such as “Eastern Anatolia Project – DAP”, “Eastern Black Sea Project – DOKAP” and “Southeast Anatolia Project – GAP” (Sevinç, 2011). The major regional projects

that could be considered apart from those are “Zonguldak-Bartın-Karabuk Regional Development Project” and “Yesilirmak River Basin Development Project.”

2.3.1. Southeast anatolia project (GAP)

The most important of all regional projects implemented throughout the history of the Republic has been the Southeast Anatolia project. Covering nine provinces in the region and being a multi-purpose regional development project, the GAP aims to develop all socio-economic characteristics in the region such as infrastructure, agricultural structure, transportation, industry, education and health, as a whole and in an interrelated way (Arslan & Ay, 2007).

This project emerged with Lower Euphrates Planning approached by the Directorate of State Hydraulic Works in the beginning and was called “Lower Euphrates Project.” Later, it was called the Southeast Anatolia Project (GAP) by adding the Tigris Basin Planning to this project. Transformation of works in this region into a project after passing through various stages and taking the name of GAP took place in 1978 (Dinler, 2014).

Provinces covered by the project are Adıyaman, Batman, Diyarbakır, Gaziantep, Kilis, Mardin, Siirt, Şanlıurfa and Şırnak. The area covered by the region is approximately 74.000 km² and this corresponds to 9.5% of the total area of Turkey. 9.75% of the country’s population lives in this region according to the data of 2011 (Sinemillioğlu, 2009). It occupies 11.7% of the agricultural lands, 10.3% of grasslands (meadows, pastures), 6.2% of forest-moor lands, and 11.4% of the lands reserved for other areas in Turkey. Agricultural lands (43.6%) in the region present a more advantageous situation compared to agricultural areas in Turkey (36%) in terms of surface areas (Benek, 2009).

GAP project consists of 13 projects, out of which 7 of them were located in the Euphrates basin and 6 of them in the Tigris basin (Dinler, 2014). The project, whose water resources program proposes the construction of 22 dams, 19 hydroelectric power plants and irrigation systems in 1.7 million hectares of land, has the total cost of 32 billion dollars. 27 billion kilowatt-hours of energy production a year is anticipated upon the completion of the project (Demir, 2003). Once the project is completed, 28% of Turkey’s total water potential will be brought under control with the facilities on the Euphrates and Tigris. In addition, the total area to be irrigated in

the region is 1.82 million hectares and this corresponds to 21.4% of total area that can be economically irrigated in Turkey (Benek, 2009).

As of 2014, 12 hydroelectric power plants (HES) were completed and 74% of realization was achieved in GAP energy investments. 20.6 billion Kilowatt-hours of electricity generating capacity were created annually in the region with HESs set into operation. In addition to this, 19 dams were completed. Area that was brought under irrigation reached 424.710 hectares at the end of 2014 and the planned irrigation target was realized by 40%.

The GAP Action Plan (2014-2018), whose main purpose was to improve the welfare of our citizens, to raise their standards of living and to ensure their peace and happiness by providing economic growth, social development and employment increase in the Southeast Anatolia Region, is based on five development axes (GAP Action Plan, 2014):

- i) Accelerating economic development,
- ii) Strengthening social development,
- iii) Enhancing inhabitability in cities,
- iv) Developing infrastructure
- v) Improving institutional capacity.

Actions, as per main titles and provinces, are included under these axes.

2.3.2. East anatolia project (DAP)

As will be seen in the selected socio-economic indicators in the next chapter, the most backward region compared to other regions of Turkey is East Anatolia Region. Although all the provinces in this region were included in the scope of Priority Regions for Development (KOY) that began to be implemented in the 1970s, there was no significant development in the region until the end of 1990s. The preparation of the East Anatolia Region Master Plan was decided while entering into the 2000s in order to reduce the developmental differences between the region and other regions (Dinler, 2014).

The East Anatolia Project, whose master plan was prepared in 2000, comprised 16 provinces located in the region including Ardahan, Ağrı, Bayburt, Bingöl, Bitlis, Elazığ, Erzincan, Erzurum, Gümüşhane, Hakkari, Iğdır, Kars, Malatya, Muş, Tunceli and Van. The DAP region was divided into 4 sub-regions by taking geographic and

economic characteristics into considerations. These are Erzurum Sub-region, Malatya-Elazig Sub-region and Van Sub-region. These regions also differ in terms of the level of development (Yağanoğlu, 2010). The area covered by the DAP Region is 158.972 km² and it corresponds to 20.4% of the total area of Turkey. The region holds approximately 9% of Turkey's population (Sinemillioğlu, 2009).

Three main target groups were identified in the objectives section of the DAP master plan (DAP Master Plan, 2000):

- i) Economic objectives: to increase per capita income, to increase employment, to accelerate the accumulation of capital in the region, etc.
- ii) Social objectives: to reduce intra-regional income differences, to reduce migration to out of region, to improve education and healthcare services, etc.
- iii) Environmental objectives: to better pastures, to prevent erosion, to protect and to improve forests, etc.

5 basic strategies including the improvement of current capacity, the realization of agricultural and rural development, providing support to SMEs and touristic, social and environmental measures were targeted in order to accomplish these goals (Reeves, 2006).

7 priority areas of intervention were identified in DAP Master Plan within the framework of the above-mentioned strategies (DAP Master Plan, 2000):

- i) Development of human resources,
- ii) Dissemination of organization,
- iii) Supply of infrastructure,
- iv) Improvement and management of pastures,
- v) Improvement of environmental quality,
- vi) Fight against poverty,
- vii) Finance.

Apart from these, a two-stage program was proposed to be implemented in the name of strengthening the private sector by selecting three pilot provinces in East Anatolia Region. In the first stage, a training program will be organized for potential

entrepreneurs. In the second stage, project and investment advisory offices will be established and the flow of information regarding investments and incentives will be provided to entrepreneurs (Dinler, 2014).

A new road map was drawn with regard to the project in DAP Action Plan published in 2014. In this action plan, five main topics were identified as increasing efficiency and added value in the food and agriculture sector, strengthening industrial and service sectors, infrastructure, urbanization and environmental protection, strengthening human-social capital and social infrastructure and developing institutional capacity, the advancements targeted under these headings until 2018 were listed (DAP Action Plan, 2014).

2.3.3. Eastern black sea project (DOKAP)

The Eastern Black Sea Project, covering seven provinces in northeastern Turkey, is a project created with the aim of unveiling the potential of these cities and reducing the developmental differences with other regions. Containing Artvin, Bayburt, Giresun, Gümüşhane, Ordu, Rize and Trabzon provinces, DOKAP Region accounts for approximately 5% of the total territory of the country with its area of 39.361km². The region holds approximately 5% of Turkey's total population (Sinemillioğlu, 2009).

A development plan was decided to be prepared for a region whose level of development is below the national average when compared with other regions. Japanese Government undertook the preparation of a Regional Development Plan for Eastern Black Sea Region upon the request of the Government of the Republic of Turkey. It commissioned the Japanese International Development Agency (JICA) for the fulfillment of this task. A cooperation agreement was signed between JICA and DPT as a result of meetings with the Japanese delegation and the work on the plan began in 1997 (Dinler, 2014).

A development scenario was created in DOKAP Master Plan by taking the 20-year perspective into consideration and with reference to the current status. Planning was divided into three sections according to this scenario: The first section covered the years between 2001 and 2005; the second section the years between 2006 and 2010 and the third section between the years 2010 and 2020. The phases of the targeted improvements were defined in the following way in these sections (DPT, 2000):

- Phase 1: preparation for restructuring the economy,

- Phase 2: restructuring the economy,
- Phase 3: sustainable economic growth.

There are a total of 52 projects and programs related to different sectors in DOKAP Master Plan. They were made into 10 broad program packages. Of these programs, three of them were for the arrangement of spatial structure, three were for strengthening economic structure, three were for strengthening administrative and social structure and finally, one was for the creation of DOKAP identity (DPT, 2000).

2.3.4. Change of regional policies in Turkey in the european union process

The European Union has three main structural policies including regional policy, social policy and agricultural policy. The countries pursued their own regional development policies before making the common definition of a regional policy. However, the implementation of joint regional policy was decided within the union because the differences between regions started to reach at critical levels. In this sense, the first steps were taken with the creation of Directorate General for Regional Policy in 1968 and European Regional Development Fund (ERDF) in 1975 (Türk, 2012). Another important point in the strengthening of EU regional policy was the Single European Act adopted in 1987. Arrangements were also made in the Structural Funds in order to prevent a further increase in the imbalance to be created by the integrated and a single market. Three Structural Funds began to be used in order to ensure the economic and social harmony across countries and regions: the ERDF for reducing regional differences, the ESF which aimed at fighting with structural unemployment and the improvement of working conditions, and the European Agricultural Guidance and Guarantee Fund (EAGGF) which aimed at the realization of rural development. After the completion of its political union with the Maastricht Treaty in 1992 and being named as EU, the community introduced Cohesion Fund and Financial Instrument Fund for Fisheries Guidance (FIFG) for the less developed members (Kayasü & Yaşar, 2006).

Regions gained great importance within the EU after these agreements and the localities now began to have a say in the preparation and implementation of regional policies. Structural Funds are transferred to the budgets of localities instead of the government budgets for these reasons (Kayasü & Yaşar, 2006).

While Turkey was carrying out works within the framework of its cohesion with the EU acquis, its utilization from the above-mentioned funds was also brought to agenda in this process. It was necessary to comply with the EU regional policies and to go for regional organization in order to benefit from these funds as mentioned above. For this reason, the EU made the Classification of Territorial Units for Statistics (IBBS) in parallel to the EU Statistical Classification (NUTS) (see. Table 2.1). This classification, approved by the EU, entered into force in 2002 (the Council of Ministers Decision No. 2002/4720 and dated on August 20, 2002). The necessity of establishing regional units was stated in the Accession Partnership Document of 2003 within the framework of NUTS Level 2 consisting of 26 regions (Yardımcıoğlu et al., 2012).

Table 2.1. NUTS Classification of Turkey						
NOMENCLATURE OF TERRITORIAL UNITS FOR STATISTICS (NUTS)						
NUTS 1 (12 Regional Units)		NUTS 2 (26 Regional Units)		NUTS 3 (81 provinces)		Province Traffic Code
Code	Description	Code	Description	Code	Description	
TR	TURKEY					
TRA	NORTHEAST ANATOLIA	TRA1	ERZURUM	TRA11	ERZURUM	25
				TRA12	ERZINCAN	24
				TRA13	BAYBURT	69
		TRA2	AGRI	TRA21	AGRI	4
				TRA22	KARS	36
				TRA23	IGDIR	76
				TRA24	ARDAHAN	75
TRB	MIDDLE EASTERN ANATOLIA	TRB1	MALATYA	TRB11	MALATYA	44
				TRB12	ELAZIG	23
				TRB13	BINGOL	12
				TRB14	TUNCELI	62
		TRB2	VAN	TRB21	VAN	65
				TRB22	MUS	49
				TRB23	BITLIS	13
				TRB24	HAKKARİ	30

TRC	SOUTHEAST ANATOLIA	TRC1	GAZIANTEP	TRC11	GAZIANTEP	27
				TRC12	ADIYAMAN	2
				TRC13	KILIS	79
		TRC2	SANLIURFA	TRC21	SANLIURFA	63
				TRC22	DIYARBAKIR	21
				TRC3	MARDIN	TRC31
		TRC32	BATMAN			72
		TRC33	SIRNAK			73
		TRC34	SIIRT			56
		TR1	ISTANBUL	TR10	ISTANBUL	TR100
TR2	WEST MARMARA	TR21	TEKİRDAG	TR211	TEKİRDAG	59
				TR212	EDIRNE	22
				TR213	KIRKLARELI	39
		TR22	BALIKESIR	TR221	BALIKESIR	10
				TR222	CANAKKALE	17
				TR3	AEGEAN	TR31
TR321	AYDIN	9				
TR32	AYDIN	TR322	DENIZLI			20
		TR323	MUGLA			48
		TR33	MANISA			TR331
TR332	AFYONKARAHISAR					3
TR333	KUTAHYA					43
TR334	USAK					64
TR4	EAST MARMARA	TR41	BURSA			TR411
				TR412	ESKISEHIR	26
				TR413	BILECIK	11
		TR42	KOCAELI	TR421	KOCAELI	41
				TR422	SAKARYA	54
				TR423	DUZCE	81
				TR424	BOLU	14
				TR425	YALOVA	77
TR5	WEST ANATOLIA	TR51	ANKARA	TR510	ANKARA	6
		TR52	KONYA	TR521	KONYA	42
				TR522	KARAMAN	70
TR6	MEDITERRANEAN	TR61	ANTALYA	TR611	ANTALYA	7

				TR612	ISPARTA	32
				TR613	BURDUR	15
				TR621	ADANA	1
				TR622	MERSIN	33
				TR631	HATAY	31
				TR632	KAHRAMANMARAS	46
				TR633	OSMANIYE	80
TR7	CENTRAL ANATOLIA	TR71	KIRIKKALE	TR711	KIRIKKALE	71
				TR712	AKSARAY	68
				TR713	NIGDE	51
				TR714	NEVSEHIR	50
				TR715	KIRSEHIR	40
		TR72	KAYSERI	TR721	KAYSERI	38
				TR722	SIVAS	58
				TR723	YOZGAT	66
TR8	WEST BLACK SEA	TR81	ZONGULDAK	TR811	ZONGULDAK	67
				TR812	KARABUK	78
				TR813	BARTIN	74
		TR82	KASTAMONU	TR821	KASTAMONU	37
				TR822	CANKIRI	18
				TR823	SINOP	57
		TR83	SAMSUN	TR831	SAMSUN	55
				TR832	TOKAT	60
				TR833	CORUM	19
				TR834	AMASYA	5
TR9	EAST BLACK SEA	TR90	TRABZON	TR901	TRABZON	61
				TR902	ORDU	52
				TR903	GIRESUN	28
				TR904	RIZE	53
				TR905	ARTVIN	8
				TR906	GUMUSHANE	29

Resource: www2.ormansu.gov.tr/COB/Files/istatistik/IBBS_2005.xls

The regional system, referred to as Nomenclature of Territorial Units for Statistics (NUTS) in EU terminology, consists of three levels including NUTS 1, NUTS 2 and

NUTS 3. According to this classification, the countries are divided into NUTS 1 regions, each NUTS 1 region into NUTS 2 regions and similarly again, each NUT 2 region into NUTS 3 regions. The usage of areas of this classification, made in the name of IBBS in Turkey, is as follows (Hasanoğlu & Aliyev, 2009):

- Collection of community regional statistics,
- Realization of social and economic analysis of regions,
- Creation of the framework for the regional policy of the community.

The establishment of regional units in Turkey, namely BKAs, required by the EU, was realized in three phases. The first phase is the creation of above-mentioned IBBS classification. The second phase is the preparation of Preliminary National Development Plan (NDP) covering the years 2004-2006 under the EU harmonization process. The formation of regional development plans was aimed by identifying the socio-economic development levels of the regions with this plan. The third and final phase is initiating the establishment of Development Agencies coordinated by DPT by the adoption of the Law on the Establishment, Coordination and Duties of Development Agencies dated 2006 and numbered 5449. Firstly Cukurova Development Agency, covering Adana and Mersin provinces and Izmir Development Agency, covering Izmir province, were established after the adoption of the Law. Development Agencies were established in 26 regions located at NUTS 2 level starting from this date until 2009 (Eren & Cidecigiller, 2011).

The main objective of Development Agencies is to improve cooperation among the public and private sectors and civil society organizations, to ensure the suitable and efficient use of resources and to accelerate regional development, to ensure its sustainability and to reduce intraregional developmental differences by mobilizing the local potential in line with the principles and policies proposed in national development plans and programs. Apart from this, the duties and authorities of agencies are also stated in the above-mentioned law (Hasanoğlu & Aliyev, 2009).

2.4. Regional Differences in Turkey with Socio-Economic Indicators

2.4.1. Population and urbanization

How the population of a country scattered among its regions is an important phenomenon in order to understand the developmental differences between regions of that country. It can be commented that the regions where the population is concentrated are more advanced in terms of indicators such as income, job opportunities, education, etc., than less densely populated regions.

Some data for the year 2008 related to the population of Turkey and the regions are shown in Table 2.1. Turkey's population was 71.5 million people in 2008 according to the address-based population registration system. Data on population density, total population, population ratio, urbanization rate and the population's annual growth rate of NUTS 1 and NUTS 2 level regions are included in the table.

According to data in the table, 31.3% of Turkey's total population in 2008 gathered in the Marmara Region which is one of the seven geographical regions. The region with the highest population is the Marmara Region when considering it from this perspective. The Marmara Region is divided into three at NUTS 1 level and the proportion of these regions in the total population is as such: Istanbul (17.8%), Western Marmara (4.3%) and Eastern Marmara (9.2%) respectively. The region with the lowest population is the Eastern Anatolian Region with 8.2% in accordance with the division of seven geographical regions. Eastern Anatolian Region is divided into two as Northeast and Central Anatolia at NUTS 1 level and the shares of these two regions in total population was 3.1% and 5.1% respectively. All in all, while almost the half of total population lived in western Turkey, 18.5% of them lived in the Eastern and South-eastern Anatolia when looking at it generally.

In order for statements related to population to be more significant, it will be useful to examine 'population density' that can be explained as 'the number of people per square kilometer. According to this, the overall population of Turkey was 93 people in 2008. This figure manifests huge differences with the effect of physical and human factors that existed between regions. The province with the greatest population density was Istanbul with 2444 people if examined at NUTS 1 level. It was followed by the Eastern Marmara Region with 135 people, the Aegean Region with 105 people and the Mediterranean Region with 102 people. Regions that remain

below Turkey's average in terms of population density are usually Central and East Anatolia Regions. The region that remained the lowest in terms of this variable is the Northeast Anatolia Region with 31 people.

Regions		Population Density	Total Population	Share of Population (%)	Urbanization rate	Annual population growth rate (‰)
TR	Turkey	93	71.517.100	100,0	74,96	13,10
TR1	Istanbul	2444	12.697.164	17,8	98,99	9,76
TR10	Istanbul	2444	12.697.164	17,8	98,99	9,76
TR2	West Marmara	72	3.107.425	4,3	61,53	17,82
TR21	Tekirdag	80	1.502.358	2,1	66,67	29,89
TR22	Balıkesir	66	1.605.067	2,2	56,71	6,64
TR3	Aegean	105	9.384.848	13,1	71,61	9,15
TR31	İzmir	316	3.795.978	5,3	90,90	15,03
TR32	Aydin	83	2.674.760	3,7	56,30	20,51
TR33	Manisa	65	2.914.110	4,1	60,55	-8,68
TR4	East Marmara	135	6.579.426	9,2	83,53	24,97
TR41	Bursa	121	3.442.871	4,8	87,03	21,84
TR42	Kocaeli	155	3.136.555	4,4	79,70	28,43
TR5	West Anatolia	93	6.748.952	9,4	88,48	14,49
TR51	Ankara	186	4.548.939	6,4	96,64	18,23
TR52	Konya	46	2.200.013	3,1	71,61	6,79
TR6	Mediterranean	102	9.050.691	12,7	69,52	16,07
TR61	Antalya	70	2.514.175	3,5	66,99	21,65
TR62	Adana	123	3.629.227	5,1	82,46	7,40
TR63	Hatay	125	2.907.289	4,1	55,55	22,13
TR7	Central Anatolia	42	3.792.508	5,3	67,64	4,23
TR71	Kirikkale	48	1.492.804	2,1	59,71	7,77
TR72	Kayseri	39	2.299.704	3,2	72,79	1,94
TR8	West Black Sea	61	4.478.029	6,3	57,16	0,03
TR81	Zonguldak	108	1.020.767	1,4	48,75	4,20
TR82	Kastamonu	28	737.308	1,0	53,24	6,15
TR83	Samsun	72	2.719.954	3,8	61,37	-3,18
TR9	East Black Sea	71	2.507.387	3,5	53,75	7,50
TR90	Trabzon	71	2.507.387	3,5	53,75	7,50
TRA	NorthEast Anatolia	31	2.201.862	3,1	52,80	-4,94
TRA1	Erzurum	26	1.061.287	1,5	59,86	-12,92
TRA2	Agri	38	1.140.575	1,6	46,23	2,55

TRB	Middle Eastern Anatolia	47	3.618.056	5,1	56,22	16,62
TRB1	Malatya	45	1.623.891	2,3	65,85	15,51
TRB2	Van	48	1.994.165	2,8	48,37	17,52
TRC	Southeast Anatolia	98	7.350.752	10,3	67,77	24,78
TRC1	Gaziantep	152	2.318.281	3,2	78,64	24,91
TRC2	Sanliurfa	91	3.067.052	4,3	63,17	27,51
TRC3	Mardin	75	1.965.419	2,7	62,14	20,37

Resource: Turkstat website

According to data on urbanization rate found by proportioning those who live in provincial and district centers to the total population, while regions above Turkey's average were Western regions again, the regions below it were the East and Southeast Anatolia regions in terms NUTS 1 level. The urbanization rate across Turkey was around 75% as of 2008. Istanbul, which has 18% of Turkey's population, drives this rate up with its 98% urbanization rate.

According to data on the annual population growth, while Turkey's population increased 13.1 per thousand in 2008, NUTS 1 level region with the highest population growth was the Eastern Marmara Region with the increase of 25 per thousand. The main reason for the rapid increase in the population of the Eastern Marmara Region is the migration due to the presence of vast majority of industrial plants in this region. The region with the lowest population growth rate is the Northeast Anatolia Region whose population declined at 4.9 per thousand.

Turkey's population would be seen to increase to 78.7 million and its population density increased to 102 in overall Turkey when examining Table 2.2 that contains the population data of 2015. This increase was almost entirely due to the western regions and the Mediterranean Region of Turkey. In a sense, it can be seen that no significant changes took place in the regions that remain in the east of Ankara. Regions where the population gathered were the West regions that were more developed than other regions. Apart from these, the greatest difference between 2008 and 2015 was seen in the rate of urbanization. The urbanization rate rose to 92.1% all over Turkey under the influence of the laws that carried some provinces to metropolitan status.

Table 2.3. Regional Population Statistics by NUTS 1 & NUTS 2 (2015)						
Regions		Population Density	Total Population	Share of Population (%)	Urbanization rate	Annual population growth rate (‰)
TR	Turkey	102	78.741.053	100	92,1	13,36
TR1	Istanbul	2821	14.657.434	18,6	100,0	19,3
TR10	Istanbul	2821	14.657.434	18,6	100	19,32
TR2	West Marmara	79	3.387.449	4,3	87,36	10,64
TR21	Tekirdag	90	1.687.420	2,1	87,14	21,98
TR22	Balıkesir	70	1.700.029	2,2	87,58	-0,48
TR3	Aegean	114	10.138.132	12,9	94,27	11,37
TR31	İzmir	347	4.168.415	5,3	100	13,37
TR32	Aydin	91	2.955.825	3,8	100	13,84
TR33	Manisa	67	3.013.892	3,8	80,71	6,19
TR4	East Marmara	154	7.499.352	9,5	95,55	22,55
TR41	Bursa	136	3.881.624	4,9	98,85	18,68
TR42	Kocaeli	179	3.617.728	4,6	92,01	26,72
TR5	West Anatolia	106	7.643.315	9,7	99,13	19,03
TR51	Ankara	215	5.270.575	6,7	100	23,13
TR52	Konya	50	2.372.740	3,0	97,2	9,98
TR6	Mediterranean	113	10.039.939	12,8	96,68	13,35
TR61	Antalya	83	2.968.561	3,8	92,97	23,97
TR62	Adana	134	3.928.388	5,0	100	9,09
TR63	Hatay	135	3.142.990	4,0	96,03	8,73
TR7	Central Anatolia	43	3.894.341	4,9	79,07	2,08
TR71	Kirikkale	49	1.515.228	1,9	67,55	4,65
TR72	Kayseri	40	2.379.113	3,0	86,41	0,45
TR8	West Black Sea	61	4.502.525	5,7	74,63	1,99
TR81	Zonguldak	108	1.023.593	1,3	61,03	3,97
TR82	Kastamonu	29	757.711	1,0	61,77	0,96
TR83	Samsun	73	2.721.221	3,5	83,33	1,54
TR9	East Black Sea	73	2.572.850	3,3	85,02	2,34
TR90	Trabzon	73	2.572.850	3,3	85,02	2,34
TRA	Northeast Anatolia	31	2.195.359	2,8	69,21	-4,98
TRA1	Erzurum	26	1.063.789	1,4	87,97	-3,54
TRA2	Agri	38	1.131.570	1,4	51,57	-6,34
TRB	Middle Eastern Anatolia	49	3.824.817	4,9	79,37	6,01
TRB1	Malatya	47	1.700.468	2,2	84,02	5,68
TRB2	Van	51	2.124.349	2,7	75,65	6,27
TRC	Southeast Anatolia	112	8.385.540	10,6	92,04	16,21

TRC1	Gaziantep	174	2.665.265	3,4	90,9	18,63
TRC2	Sanliurfa	105	3.546.516	4,5	100	18,73
TRC3	Mardin	83	2.173.759	2,8	80,46	9,17

Resource: Turkstat website

Data on the total fertility and infant mortality rates of 2009 and 2015 were included in Table 2.3. Total fertility rate referred to the average number of children that a woman may give birth to during the period of her fertility (15-49 age groups). Turkey's average in total fertility rate was 2.1 in 2009, in other words, the population was at the level of renewal. The region with the lowest fertility rate was Western Marmara Region with 1.5 and Eskisehir was with 1.4 in terms of provinces in 2009 by the regions at NUTS 1 level. In this sense, NUTS 1 level region with the highest fertility rate was the Southern Anatolia Region with 3.6 and Sirnak was with 4.69 in terms of provinces. It can be seen from the table that very dramatic changes did not occur in these figures in 2015.

Table 2.4. Total fertility rate & infant mortality rate					
NUTS 1 regions		Fertility rate		Infant mortality rate (‰)	
		2009	2015	2009	2015
TR	Turkey	2,1	2,1	13,9	10,7
TR1	Istanbul	1,8	1,9	11,4	8,5
TR2	West Marmara	1,5	1,7	13,3	7,2
TR3	Aegean	1,7	1,8	14,3	9,1
TR4	East Marmara	1,8	1,9	12,8	8,1
TR5	West Anatolia	1,8	1,9	13,4	8,3
TR6	Mediterranean	2,2	2,3	13,7	10,9
TR7	Central Anatolia	2,2	2,1	11,9	10,7
TR8	West Black Sea	1,8	1,7	13,0	8,4
TR9	East Black Sea	1,9	1,8	11,4	8,0
TRA	Northeast Anatolia	2,9	2,8	12,6	13,3
TRB	Middle Eastern Anatolia	3,0	2,7	17,3	14,3
TRC	Southeast Anatolia	3,6	3,5	17,5	15,9

Resource: Turkstat website & own calculations

The infant mortality rate referred to the ratio of the number of babies born in a society and die before completing one year of age to the number of infants who were

born in the same society at the same time. The infant mortality rate, which was 13.9 per thousand in 2009 across Turkey, would be seen to fall 10.7 per thousand by 2015 when examining the table. While the lowest infant mortality rate was seen in Istanbul and the East Black Sea regions with 11.4 per thousand in terms of NUTS 1 level regions, it was seen to be in Kars, Zonguldak and Kirklareli with 8.3 per thousand in terms of provinces in 2009. While the highest infant mortality rate was observed in Southeast Anatolia Region with 17.5 per thousand in terms of NUTS 1 level regions, it was observed in Gaziantep with 21.4 per thousand in terms of provinces.

It can easily be seen from the table that a serious decline was obtained in the infant mortality rate in 2015. The only region that experienced rise in terms of this data would be seen to be the Northeast Anatolia Region.

2.4.2. Foreign trade

Foreign trade data is one of the important variables in order to understand the developmental differences between regions. Export figures by NUTS 1 level regions were located in Table 2.4. Export, which was at 107.2 billion USD level across Turkey in 2007, rose to 157.6 billion USD in 2014. While Istanbul Region, which performed approximately 56 % of Turkey's exports with 59.6 billion USD in 2007, ranked the first in this regard, the Northeast Anatolia Region was in the position of the region with the lowest exports with 184 million USD. 75% of total exports across Turkey were solely performed by the Marmara Region. The share of Marmara Region in total exports fell to 67% by the year 2014. Regions with lowest exports at NUTS 1 level were again the Eastern Anatolia Regions.

It would be seen that while Turkey's average was 1.520 USD in 2007, it rose to 2.029 USD in 2014 when examining exports per capita. NUTS 1 level region, which made the highest exports per capita in 2007 and 2014, was Istanbul with 4.744 and 5.707 USD respectively. Together with Istanbul, the only region that rose above Turkey's average in terms of this data was the East Marmara Region. In this sense, the lowest figures belonged to the Northeast Anatolia Region as in the total exports. It can be stated that the export composition on regional basis did not change too much from 2007 to 2014.

Table 2.5. Export by NUTS 1 Regions							
Region		2007			2014		
		Total (Million USD)	Share (%)	Per capita (USD)	Total (Million USD)	Share (%)	Per capita (USD)
TR	Turkey	107.272	100	1.520	157.610	100	2.029
TR1	Istanbul	59.645	55,6	4.744	82.048	52,1	5.707
TR2	West Marmara	1.072	1,0	351	2.127	1,3	635
TR3	Aegean	10.365	9,7	1.115	16.312	10,3	1.627
TR4	East Marmara	19.132	17,8	2.981	22.339	14,2	3.047
TR5	West Anatolia	5.062	4,7	761	9.952	6,3	1.327
TR6	Mediterranean	4.421	4,1	496	8.107	5,1	818
TR7	Central Anatolia	1.221	1,1	323	2.422	1,5	623
TR8	West Black Sea	723	0,7	161	1.716	1,1	382
TR9	East Black Sea	1.712	1,6	688	2.129	1,4	830
TRA	Northeast Anatolia	184	0,2	83	248	0,2	112
TRB	Middle Eastern Anatolia	439	0,4	123	981	0,6	258
TRC	Southeast Anatolia	3.287	3,1	458	9.228	5,9	1.118

Resource: Turkstat website & own calculations

The import figures of 2007 and 2014 for NUTS 1 level regions can be seen in Table 2.5. Total imports, which were 170 billion USD in 2007, rose to 242.1 billion USD in 2014. The highest share belonged to Istanbul region with 98.9 billion USD and the lowest belonged to the Middle Eastern Anatolia Region with 101 million USD when examining import shares by regions in 2007. While Istanbul Region still was located in the first place with 56.2% of total imports, the Northeast Anatolia Region, which made 0.1% of total imports, became the last with 145 million USD when looking at the data of 2014.

It can be seen when looking at imports per capita that while Turkey's average was 2.409 USD in 2007, this figure rose to 3.117 USD in 2014. The only region, which was above Turkey's average in terms of this data, was Istanbul Region with 7.872 USD in 2007 and 9.461 USD in 2014 respectively. Other regions were below Turkey's average.

Table 2.6. Import by NUTS 1 Regions							
Region		2007			2014		
		Total (Million USD)	Share (%)	Per capita (USD)	Total (Million USD)	Share (%)	Per capita (USD)
TR	Turkey	170.063	100	2.409	242.177	100	3.117
TR1	Istanbul	98.977	58,2	7.872	136.022	56,2	9.461
TR2	West Marmara	989	0,6	324	1.927	0,8	575
TR3	Aegean	9.522	5,6	1.024	16.391	6,8	1.635
TR4	East Marmara	15.748	9,3	2.454	20.672	8,5	2.819
TR5	West Anatolia	7.575	4,5	1.139	12.450	5,1	1.660
TR6	Mediterranean	6.558	3,9	736	10.237	4,2	1.033
TR7	Central Anatolia	1.537	0,9	407	2.134	0,9	549
TR8	West Black Sea	2.414	1,4	539	3.134	1,3	698
TR9	East Black Sea	260	0,2	104	247	0,1	96
TRA	Northeast Anatolia	103	0,1	47	145	0,1	66
TRB	Middle Eastern Anatolia	101	0,1	28	231	0,1	61
TRC	Southeast Anatolia	2.771	1,6	386	6.453	2,7	782

Resource: Turkstat website & own calculations

While the rate of exports meeting imports throughout Turkey was 63% in 2007, this rate rose to 65% in 2014. The data of 7 regions were more than 100% in 2007, in other words, these 7 regions made more exports when examining NUTS 1 level regions from this perspective. The exports of 8 regions were more than their imports in 2014. However, foreign trade deficit across Turkey was experienced because Istanbul made more than 50% of Turkey's total exports and imports and this region made much more imports.

2.4.3. Education

Until recently, the most important reason for the development of a country was thought to be its physical production resources. However, studies in recent years have shown that the productivity growth was more important than these resources mentioned. Human capital was seen to be the most important input in terms of productivity growth. The most important factor affecting the human capital is undoubtedly education (Dinler, 2014).

Some education statistics at NUTS 1 level are given in Table 2.6. Statistics on the rate of schooling in secondary education by 2007 and 2014 are located in the

leftmost column of the table. This data demonstrates the percentage of those who are at school age and attend in school. While the rate of schooling in secondary education across Turkey was 58.56% in 2007, it rose to 79.4% in 2014. While the highest rate in 2007 occurred in the Western Marmara Region with 74.45%, the lowest rates occurred in East and Southeast Anatolia Regions with below 40%. This rate throughout NUTS 1 regions in 2014 rose over 80% with the exception of East and Southeast Anatolia Region. It is clear in this sense that there is a serious improvement in East and Southeast Anatolia Regions.

In 2012, Elementary School, where 8-year compulsory education is offered, was divided into two as Primary and Secondary schools. The rate of schooling at elementary school level was above 90% in 2007. The schooling rates in Primary and Secondary School are above 90% in all regions by the year 2014 as can be seen from the table.

Table 2.7. Education Statistics by NUTS 1							
Regions		Schooling rate in secondary education (%)		Schooling rate in primary school(%)	Schooling rate in secondary school (%)	Number of instructors in tertiary education	
		2007	2014			2007	2014
TR	Turkey	58,56	79,4	96,3	94,4	98766	148903
TR1	Istanbul	63,42	82,4	97,2	95,8	19469	28206
TR2	West Marmara	74,45	85,2	94,8	95,5	3465	5957
TR3	Aegean	66,27	84,3	94,9	95,8	13810	19197
TR4	East Marmara	72,05	86,5	95,7	96,2	10005	14166
TR5	West Anatolia	69,13	85,8	95,6	96,1	21803	24155
TR6	Mediterranean	61,02	80,3	95,1	94,1	8546	12553
TR7	Central Anatolia	59,82	81,7	95,1	94,3	4796	9283
TR8	West Black Sea	61,95	85,8	95,2	95,6	3949	8837
TR9	East Black Sea	67,33	90,1	94,6	95,3	2417	5986
TRA	Northeast Anatolia	38,12	65,0	98,1	91,1	3097	5791
TRB	Centraleast Anatolia	39,85	64,8	97,9	90,1	4045	6943
TRC	Southeast Anatolia	34,76	65,6	98,4	91,5	3364	7829

Resource: Turkstat website

Universities, which have the capacity to make direct contribution to the development of a region, are very important position for regions. The development levels of regions can significantly be enhanced through projects that can be conducted in collaboration with university-state-private sector. ‘Total number of instructors in

higher education' indicator was added to education statistics by taking the important of this issue into consideration. The number of Instructors, which was 98.766 throughout Turkey in 2007, increased to 148.903 in 2014 by the effect of the newly-founded universities. While the Western Anatolia Region has the highest rate of total number of instructors with 22% in 2007, it decreased to 16% in 2014. Aegean and Istanbul Regions have important places in this field with rates of over 10%.

The rates of schooling in secondary education in NUTS 1 level regions in terms of gender can be seen in Figure 2.1. Although there was no significant different in male/female schooling rates between regions, the schooling rates of male students especially in the East and Southeast Anatolia Regions were higher compared to those of female students and it was seen that the situation was either equal or in favor of female students in other regions with the exception of the Eastern Black Sea Region.

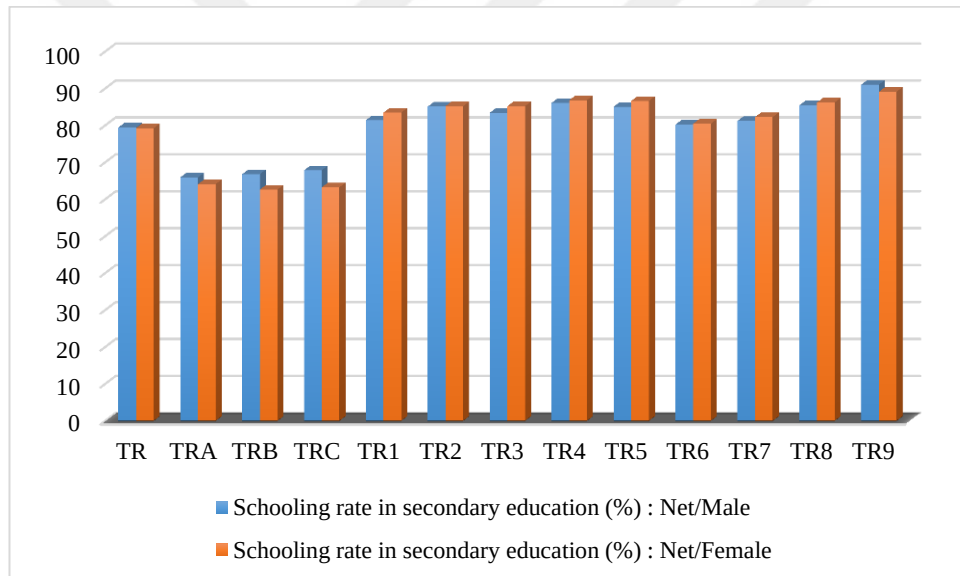


Figure 2.1.Schooling rate in secondary education by gender (2014, %)

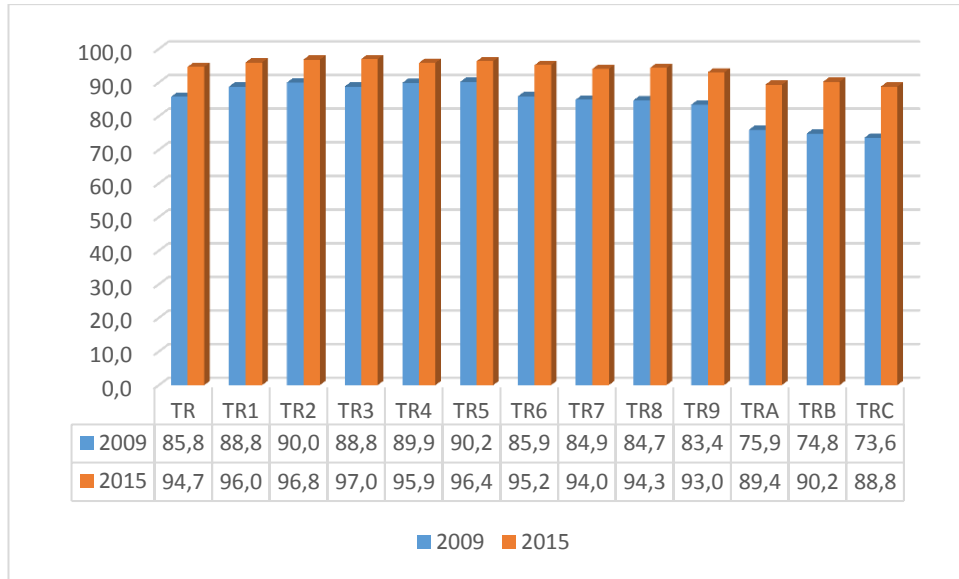


Figure 2.2. Literacy Rate by NUTS 1 regions

The literacy rates of 2009 and 2015 in terms of NUTS 1 level regions are given in Figure in 2.2. The literacy rate, which was approximately 86% in 2009 across Turkey, rose to approximately 95% in 2015. While the region with the highest rate was the Western Anatolia Region with 90.2% in 2009, it was the Aegean Region with 97% in 2015. The East and Southeast Anatolia Regions, which were way below Turkey's average with 70% in 2009, reached 90% of literacy rate in 2015.

2.4.4. Employment

Another important indicator of developmental differences between regions is the labor force participation rate. The higher the developmental level of the region becomes, the more the labor force participation rate gets. The labor force participation rate is generally low in our country. The main reasons for this can be listed as early retirement, studentship and the lowness of education level. Some employment data of NUTS 2 level regions for the years 2004 and 2015 are given in Table 2.7.

If the data on the labor force participation rate is examined, this rate, which was 46.3% across Turkey in 2004, rose to 51.3% in 2015. The main reason for this rise is the increase in the labor force participation rate among women, which was 23.3% in 2004, to 31.5% in 2015. There have been significant changes in the labor force participation rate among women in all regions with the exception of a few regions. While the regions with the highest labor force participation rate were generally

Trabzon region (65.8%) in 2004 and Tekirdag region (57.4%) in 2015, those with lowest labor force participation rates were Sanliurfa region (37%) in 2004 and Mardin region (38.2%) in 2015. While the labor force participation rate in many of NUTS 2 level regions located in Western Anatolia and the Marmara Regions was above Turkey's average, it was below the average in many of NUTS 2 level regions located in the East and Southeast Anatolia Regions where the level of education was low.

NUTS 2 Regions		Labor force participation rate						Unemployment rate					
		2004			2015			2004			2015		
		Male	Female	Overall	Male	Female	Overall	Male	Female	Overall	Male	Female	Overall
TR	Turkey	70,3	23,3	46,3	71,6	31,5	51,3	10,8	11	10,8	9,2	12,6	10,3
TR10	Istanbul	71,5	19,3	45,2	75,4	33,4	54,4	11,7	14,9	12,4	11,1	17	12,9
TR21	Tekirdag	74,9	34	54,4	76	38	57,4	5,8	8,5	6,6	5,5	11	7,3
TR22	Balikesir	68,2	27,6	47,3	64,5	30,4	47,1	6,2	7,1	6,5	4,7	6,6	5,3
TR31	Izmir	69,5	22,7	45,7	71,9	35,6	53,5	14,2	20,2	15,7	12,2	20,5	15
TR32	Aydin	73,9	37,7	55,3	69,6	38,5	54	6,4	9,9	7,7	6,1	8,2	6,9
TR33	Manisa	69,8	26,8	47,8	71,6	34,4	52,6	8,3	6	7,6	3,9	4,5	4,1
TR41	Bursa	74,6	28,3	51,2	70,9	30,1	50,3	8,7	10,8	9,3	6,6	10,5	7,8
TR42	Kocaeli	65,9	16,6	41,2	75,4	35,5	55,4	12,8	12,2	12,7	8,5	13,6	10,1
TR51	Ankara	68,2	20,8	43,8	73,4	31,9	52,2	12,6	23,7	15,3	8,4	17,4	11,2
TR52	Konya	68,4	17,2	42	73,4	29	51,2	9,4	7	8,9	5,4	9,4	6,5
TR61	Antalya	72,4	31,3	51,5	73,7	37,8	55,5	6,6	7,8	7	8	12,7	9,6
TR62	Adana	69,6	16,9	42,8	71,8	29,9	50,5	13,7	19,3	14,9	8,3	13,4	9,8
TR63	Hatay	68,8	15,9	41	66,8	20,5	42,8	17,4	17,7	17,4	14,4	22,7	16,4
TR71	Kirikkale	68,2	22,2	44,3	72,4	31,5	51,6	11,3	7	10,2	8,3	13,6	9,9
TR72	Kayseri	65,4	12,4	37,8	70,9	27,7	48,9	9,7	10,8	9,9	8,7	12,3	9,7
TR81	Zonguldak	66,2	28,3	46,5	68,3	35,8	51,8	14,2	7,7	12,2	5,9	9,1	7
TR82	Kastamonu	63,5	14,6	38,2	67,8	40,2	53,5	10,8	10,6	10,7	5,9	8,2	6,8
TR83	Samsun	72,5	39,3	55,1	68	35,1	51,1	6,8	5,4	6,2	6	7,6	6,5
TR90	Trabzon	78,7	54	65,8	68,1	39,7	53,9	8,2	5,1	6,9	5	4,4	4,8
TRA1	Erzurum	74,4	42,5	58	70,4	32,5	51	4,5	2,1	3,6	7,5	2,6	5,9
TRA2	Agri	65,4	23,7	44,2	71	37,1	54,2	2	1,2	1,8	4,3	3,3	3,9
TRB1	Malatya	70,8	19,1	44,4	68,3	28,3	48,2	18,8	20,5	19,2	7,6	8,9	8
TRB2	Van	71,6	10,7	40,4	67,2	26,8	47,1	11,9	2,4	10,6	11,8	3,4	9,5
TRC1	Gaziantep	75,4	8,3	41,5	68,2	18,9	43,1	15,8	8,9	15,1	9,6	11,1	9,9
TRC2	Sanliurfa	63,7	11,2	37	68,6	20,2	43,7	12,7	7,3	11,8	19,3	11,7	17,5
TRC3	Mardin	61,7	16,1	38,9	65,9	12,2	38,2	7,5	1,1	6,1	24,5	26,3	24,8

Resource: Turkstat website

Differences in the labor force participation rate among the regions were also reflected in the unemployment rate. Columns on the right of Table 2.7 contain data on the unemployment rates of NUTS 2 level regions in the years 2004 and 2015. The overall unemployment rate in Turkey was 10.8% in 2004. The region with the highest unemployment rate was Malatya Region with 19.2% in 2004. It was followed by Hatay Region with 17.4%, Izmir Region with 15.7% and Ankara Region with 15.3% respectively. The region with the lowest unemployment rate was Agri Region with 1.8% in 2004. Agri Region was followed by Erzurum Region with 3.6% and Mardin Region with 6.1% respectively.

A slight decline was seen in the unemployment rate throughout Turkey despite the increase in the labor force participation rate and it decreased to 10.3% by the year 2015. There are only 5 regions above Turkey's average with their unemployment rate among 26 NUTS 2 level regions. However, since Istanbul and Ankara Region, which make up a large portion of Turkey's labor force, were also included among these regions, the overall unemployment rate rose this much. The highest unemployment rates were observed in Mardin Region with 24.8% and Sanliurfa Region with 17.5% respectively in 2015. In this sense, Agri Region (3.9%) and Manisa Region (4.1%) were seen to be the regions with the lowest unemployment rates in 2015.

Table 2.9. Sectoral Shares of Employment							
NUTS 2 Regions		Agriculture		Industry		Services	
		2009	2015	2009	2015	2009	2015
TR	Turkey	24,6	20,6	25,3	27,2	50,1	52,2
TR10	Istanbul	0,3	0,7	37,7	36,2	62,1	63,1
TR21	Tekirdag, Edirne, Kiklarelili	22,2	19	32,7	39,2	45,1	41,8
TR22	Balikesir, Canakkale	40	29,5	19,5	21,2	40,5	49,2
TR31	Izmir	8,5	9,9	28	32	63,4	58,1
TR32	Aydin, Denizli, Mugla	27,9	28,1	22,7	23,1	49,4	48,8
TR33	Manisa, Afyon, Kutahya, Usak	39,1	37,9	26,4	23,4	34,4	38,7
TR41	Bursa, Eskisehir, Bilecik	11,8	11,5	40,8	39,4	47,4	49
TR42	Kocaeli, Sakarya, Duzce, Bolu, Yalova	19,7	18,1	33,3	35,2	46,9	46,6
TR51	Ankara	1,7	3,6	23	24,4	75,3	72
TR52	Konya, Karaman	32	25,9	24,3	27,2	43,7	46,9
TR61	Antalya, Isparta, Burdur	33,8	25,1	14,1	14,9	51,9	60
TR62	Adana, Mersin	28,9	21,3	20,8	24,1	50,4	54,6
TR63	Hatay, Kahramanmaras, Osmaniye	30,8	20,7	28	28,8	41,2	50,5

TR71	Kirikkale, Aksaray, Nigde, Nevsehir, Kırsehir	34,8	32,8	15,3	18,4	49,9	49
TR72	Kayseri, Sivas, Yozgat	26,7	30,7	25,3	25,7	47,9	43,6
TR81	Zonguldak, Karabuk, Bartın	49,2	35,8	20,6	23,2	30,2	41,1
TR82	Kastamonu, Cankiri, Sinop	42,9	46,6	17,4	14,5	39,8	39
TR83	Samsun, Tokat, Corum, Amasya	51,6	39,4	12,9	19	35,5	41,6
TR90	Trabzon, Ordu, Giresun, Rize, Artvin, Gumushane	54,6	43,8	12,8	17	32,6	39,2
TRA1	Erzurum, Erzincan, Bayburt	54	51,7	8,3	10,8	37,6	37,5
TRA2	Agri, Kars, Iğdir, Ardahan	64,1	59,6	6,3	12,3	29,6	28,4
TRB1	Malatya, Elazığ, Bingöl, Tunceli	36,6	29,3	15,6	18	47,8	52,8
TRB2	Van, Mus, Bitlis, Hakkari	36,3	46,9	12,9	19,6	50,8	33,6
TRC1	Gaziantep, Adıyaman, Kilis	24,5	17,8	32,4	31,8	43,1	50,4
TRC2	Sanliurfa, Diyarbakir	28,9	36,1	16,2	19,9	54,9	44,1
TRC3	Mardin, Batman, Siirt	22,2	18,1	21,5	18,9	56,3	62,8

Resource: Turkstat website

One of the most important variables that can be viewed to measure the degree of development of a region is the sectoral distribution of employment. Table 2.8 shows the sectoral distribution of employment for NUTS 2 level regions by the years 2009 and 2015. The highest share belonged to the service sector with 50.1% in 2009 when examining the shares throughout Turkey. The service sector was followed by the industrial sector with 25.3% and the agricultural sector with 24.6% respectively. While the share of agricultural sector in total employment decreased to 20.6%, that of industrial sector and service sector were seen to increase to 27.2% and 52.2% respectively. The increase of the shares of other sectors, while the share of the agricultural sector declined, can be interpreted as the rising level of development.

The regions with the highest agricultural employment on regional basis in 2009 were Ağrı (64,1%), Trabzon (54,6%) and Erzurum (54%) regions respectively. The regions with lowest agricultural employment were Istanbul (0,3%), Ankara (1,7%) and Izmir (8,5%) respectively. In 2009, the regions with the highest employment shares in the industrial sector were Bursa and Istanbul Regions with 40.8% and 37.7% respectively, and those with the lowest shares of employment were Agri and Erzurum regions with 6.3% and 8.3% respectively. There were no significant differences among regions in terms of the service sector like in other two sectors. In this sense, the region with the highest employment in the service sector was Ankara regions due to being the capital city. The employment in the agricultural sector can be said to decline in all regions with the exception of a few regions by the year 2015.

The employment shares in the industrial and service sectors increased with the exception of a few regions.

2.4.5. Health

All of the planned works carried out for improving the health level of communities in a way to include the protection of the physical and mental health of individuals and societies, the execution of the treatments of sick individuals, and the activities of rehabilitation conducted with the purpose of ensuring the survival of those who are not likely to recover completely despite all medical interventions or the subsistence of disabled citizens without depending on others are called “health care services.” The distribution of health services evenly among the regions is an important indicator demonstrating the development levels of the regions together with other concepts such as per capita income, low unemployment rates and the level of industrialization. Comparisons in the field of health among regions are usually carried out on the data such as the number of doctors per person, drug consumption and the number of beds (DİKA, 2010).

The figures for the number of doctor per one hundred thousand people by NUTS 1 level regions can be seen in Figure 2.3. Figures for the years 2000 and 2014 were given together in order to see the changes over time. While the number of doctors per one hundred thousand people throughout Turkey was 126 in 2000, it rose to 175 in 2014. Major differences can be seen among NUTS 1 regions in terms of these statistics in 2000. The topmost region in terms of the number of doctors per one hundred thousand people was Istanbul Region with 217 doctors. There were only two regions above Turkey’s average apart from Istanbul: Western Anatolia Region with 203 and the Aegean Region with 142 doctors. The lowest figures were seen in the East and Southeast Anatolia Regions as in many other indicators. Southeast Anatolia Region, which was below the half of Turkey’s average with 60 doctors, especially took the lead in this regard.

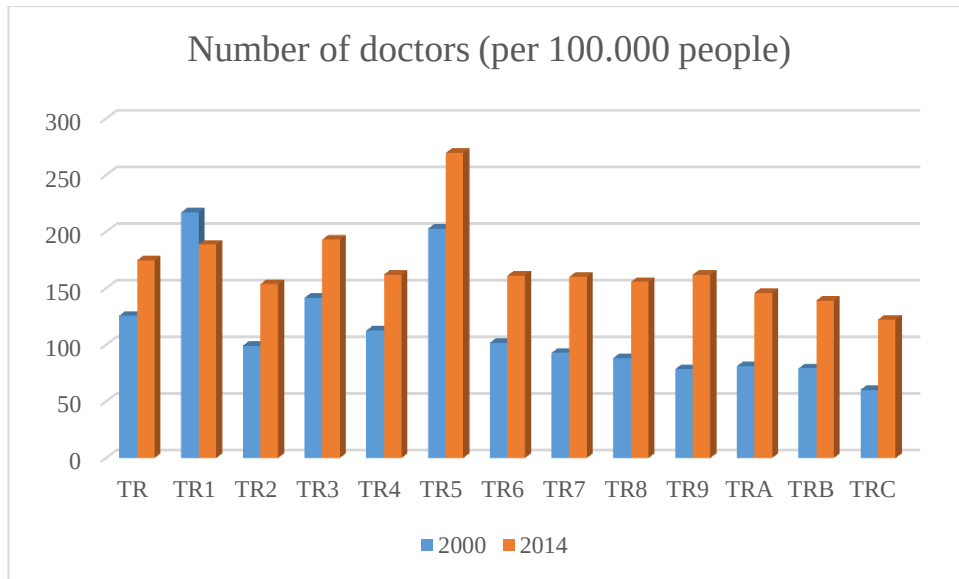


Figure 2.3. Number of doctors (per 100.000 people)

The major differences existed between regions can be said to disappear and at least a significant improvement was made by the year 2014. The region with the highest number of doctors per one hundred thousand people in 2014 was the Western Anatolia Region with 270 doctors. The Southeast Anatolia Region was located at the bottom among regions with 122 doctors.

Figure 2.4 shows the number of dentists per one hundred thousand people between 2000 and 2014 as of NUTS 1 level regions. This number, which was 23 throughout Turkey in 2000, rose to 30 dentists in 2014. While the region in the best state was seen to be Istanbul with 48 dentists in 2000, it was the Western Anatolia in 2014. Even though there were no very significant differences between the Western and Eastern regions in 2000, these differences can be said to decrease relatively by the year 2014 with the exception of Istanbul and Western Anatolia.

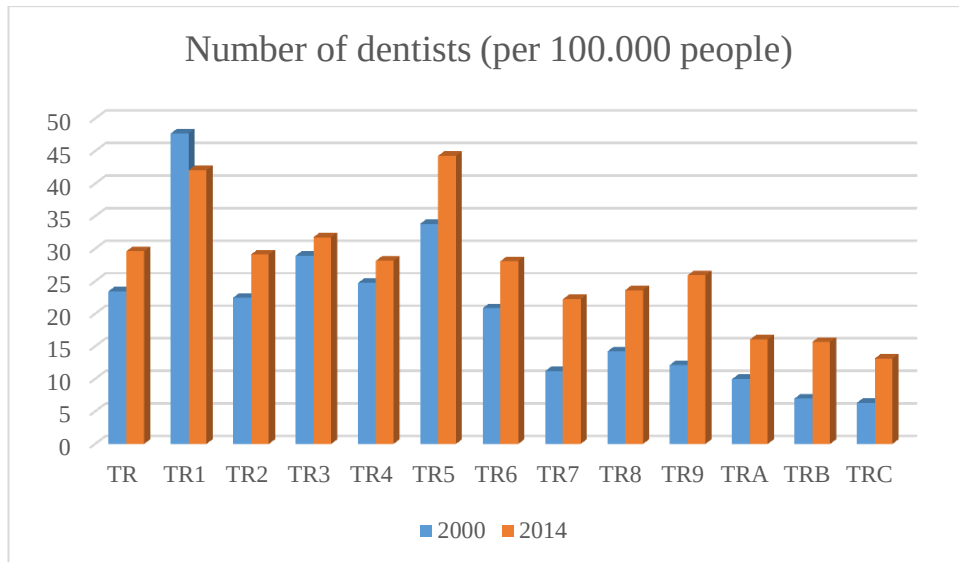


Figure 2.4. Number of dentists (per 100.000 people)

Data on the number of hospital bed per one hundred thousand people can be seen in figure 2.5. While 230 beds fell for per one hundred thousand people across Turkey in 2007, this figure rose to 266 beds in 2014. Regions with the highest number of beds for the year 2000 were the Eastern Black Sea (304), Western Anatolia (292) and the Western Black Sea (289) Regions. The region with the least number of beds was the Southeast Anatolia Region (139). No significant differences were observed between the remaining other regions.

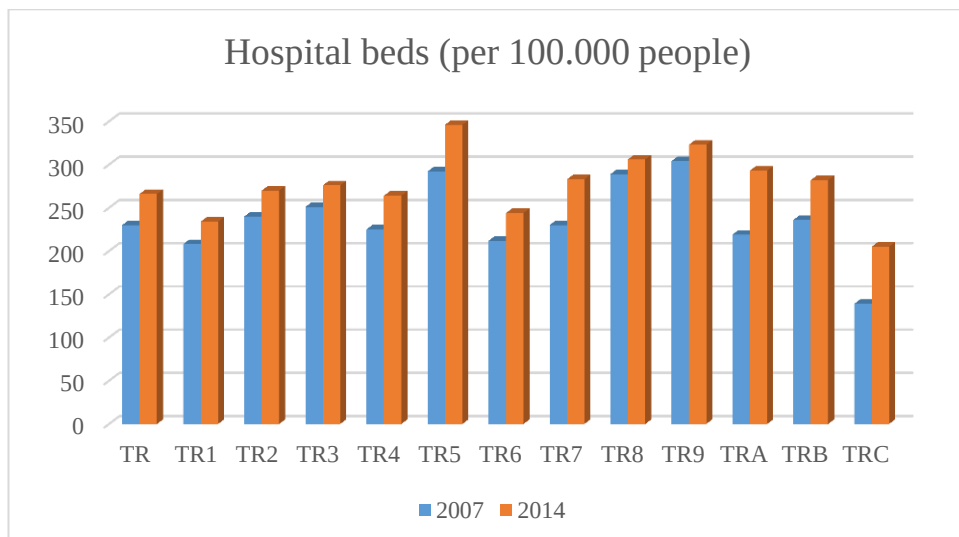


Figure 2.5. Hospital beds (per 100.000 people)

We can see that the regions with the highest number of beds in 2007 remained in the same position and Southeast Anatolia Region still had the least number of beds when examining the data of 2014. However, it can clearly be seen that the distribution between the regions in 2014 became more-balanced compared to that of 2007.

It can be said when generally examining the indicators in the field of health that a more balanced situation occurred among the regions over the time. Therefore, it can be speculated that the policies implemented in the field of health became successful.

2.4.6. Energy consumption

One of the important variables showing the developmental differences among regions is also the energy consumption. Data on the total energy consumption and its share in Turkey's total consumption as of NUTS 1 level regions are included in Table 2.9.

NUTS 1 Regions		Total consumption (MWh)			
		1995	Share (%)	2014	Share (%)
TR	Turkey	67092322	100	207375078	100
TR1	Istanbul	13126020	20	34964209	17
TR3	Aegean	12135845	18	33632976	16
TR4	East Marmara	9255618	14	31732533	15
TR6	Mediterranean	8767197	13	30771541	15
TR5	West Anatolia	5727833	9	17355922	8
TR2	West Marmara	4427458	7	16102322	8
TR8	West Black Sea	3867644	6	10402809	5
TRC	SouthEast Anatolia	3278286	5	12680264	6
TR7	Central Anatolia	2884053	4	8404030	4
TRB	Centraleast Anatolia	1520975	2	4740213	2
TR9	East Black Sea	1444609	2	4322442	2
TRA	Northeast Anatolia	656784	1	2265817	1

Resource: Turkstat website & own calculations

As can be seen from the table, the Western regions, where the industrial facilities are clustered, realize approximately 52% of Turkey's energy consumption as of 1995. Harboring a large portion of Turkey's population, Istanbul made 20% of total energy consumption alone. The lowest energy consumptions were made in East and

Southeast Anatolia regions. Although Istanbul's share in total energy consumption fell to 17% in 2014, its situation as having the highest share remained unchanged. No significant changes were experienced within these years in East and Southeast Anatolia regions.

Per person electricity consumptions are given in Table 2.10. The highest per person consumption was in the Western Marmara Region with 3976 kWh. The western regions led by landslide in this area as in the total consumption. When looking at where the electricity is used, more than 50% of the electricity consumed in the West and East Marmara Regions, where industrial plants were concentrated, was seen to be used in the industry. The lowest consumption amount was from Northeastern Anatolia Region with 731 kWh.

Table 2.11. Energy Consumption per Person by NUTS 1 Regions					
NUTS 1 Regions		Consumption per person (KWh)			
		2007		2014	
		Overall	Industry	Overall	Industry
TR	Turkey	2198	1045	2669	1258
TR2	West Marmara	3976	2730	4804	3440
TR4	East Marmara	3708	2519	4328	2973
TR3	Aegean	2879	1529	3355	1712
TR6	Mediterranean	2209	993	3106	1538
TR8	West Black Sea	1709	907	2315	1218
TR7	Central Anatolia	1656	768	2163	935
TR5	West Anatolia	1969	690	2314	707
TRC	Southeast Anatolia	1292	539	1537	677
TR1	Istanbul	2267	694	2432	610
TR9	East Black Sea	1178	325	1684	472
TRB	Centraleast Anatolia	887	213	1247	408
TRA	Northeast Anatolia	731	108	1027	233

Resource: Turkstat website

2.4.7. Poverty indicators

The concept of poverty is one of the most important issues that occupy both the world's and Turkey's agendas. Although there are economic and social effects of poverty, its most important effect is to increase the likelihood of damaging the country's stability by threatening the functioning of the states (Çaha, 2014).

Poverty rates and lines as of NUTS 1 level regions can be found in Table 2.11. The poverty rate across Turkey was at the rate of 25.4% according to the calculations made on the basis of the 60% of median value in 2006. Although there were no significant differences between the regions in this respect, the highest rate was seen in Northeastern Anatolia. It can be seen from the table that the poverty rate across Turkey fell to 21.8% and some significant changes occurred on regional basis accordingly by the year 2014.

Table 2.12. Poverty Indicators by NUTS 1 Regions					
NUTS 1 Regions		Poverty rate (60% median income)		Poverty line (60% median income; TL)	
		2006	2014	2006	2014
TR	Turkey	25,4	21,8	2821	6665
TRA	Northeast Anatolia	23,8	21,1	1849	4411
TRB	Centraleast Anatolia	22,9	18,8	1672	4042
TRC	Southeast Anatolia	22,3	17,1	1212	3622
TR1	Istanbul	21	17	4174	8765
TR2	West Marmara	21,1	17,6	3211	7400
TR3	Aegean	23,1	17,6	3158	7269
TR4	East Marmara	19,1	14,2	3461	7495
TR5	West Anatolia	22,9	19,8	3404	8128
TR6	Mediterranean	23,8	22,1	2303	5789
TR7	Central Anatolia	18,7	17	2768	6184
TR8	West Black Sea	23,2	17	2469	6135
TR9	East Black Sea	21,1	15,3	3089	7270

Resource: Turkstat website

The poverty lines as of regions were included in the columns on the right of the table. The poverty line, which was 2821 TL throughout Turkey in 2006, increased to 6665 TL in 2014. Differences among regions in terms of poverty line can be seen from the table. This was because the living standards of each region and the general level of prices were different. While the region with the highest poverty line was Istanbul Region, the region with the lowest poverty line was Southeast Anatolia Region in 2006. No change was experienced in this situation and the regions with the highest and lowest poverty lines remained unchanged by the year 2014.

2.4.8. Industrial structure

There was a mention of significant differences in terms of the number of businesses between east and west in the first years of the Republic while introducing the causes of regional differences in Turkey in the beginning of the section. How the industry in Turkey contracted will be focused in this section.

The regional distribution of industrial enterprises from the early years of the Republic and 2001 can be found in Table 2.12. As can be understood from the table, 29.4% of industrial enterprises in Turkey were located in the Marmara Region in 1927. This meant that there were significant differences between the western and eastern sides of Turkey even in the initial years of the Republic. The Marmara Region contained 56.1% of total industrial enterprises in 1964. The shares of other regions were seen to decrease due to this increase occurring in the Marmara Region. The Marmara Region's share in overall total saw its peak with 57.9% in 1981, but it fell down to 52.4% by the year 2001. While the shares of the East and Southeast Anatolia Regions in overall total were 12.5% in 1927, this rate consistently decreased and saw its lowest point in 1973 with 3.3%. There was an increase, even if small, in this rate as of this date and it rose to 4% in 2001.

Table 2.13. Number of Manufacturing Facilities by Years: Share of Regions							
Regions	1927	1964	1973	1981	1996	2000	2001
Marmara	29,4	56,1	54,7	57,9	49,7	50,4	52,4
Aegean	19,1	14	15	14,9	19,9	17,7	17,4
Central Anatolia	13,6	11,6	12,6	11,6	12,6	14,6	14,1
Black Sea	17,5	8,2	7,8	6,8	7,1	6,8	6,3
Mediterranean	7,9	6,4	6,6	5,5	5,7	5,9	5,8
SouthEast Anatolia	7,4	1,7	2,1	2	3,6	3,2	2,8
East Anatolia	5,1	1,6	1,2	1,4	1,3	1,3	1,2

Resource: Eşiyok & Sekmen (2012)

This is a natural consequence of economic development process. Economic development in a country begins in a region which is advantageous in terms of its geographical location and its natural riches. The region with such advantages among the regions of our country is the Marmara Region.

The distribution of manufacturing industry in accordance with NUTS 2 level regions can be found in Table 2.13. Istanbul region had 24.9% of total number of businesses in 2001. In addition to this, Istanbul provided 33% of total employment and generated 23% of total added-value in 2001. Istanbul was followed by Ankara and Izmir with 6.9%, Bursa with 6.6% and Aydin regions with 5.5% respectively in terms of the distribution of the total number of businesses in 2001. These five regions harbored approximately 50% of businesses in the country. The regions with the lowest number of businesses were Ağrı, Mardin, Van and Erzurum regions which are proportionately under 1%. There were not any changes in the ranking of regions in terms of ratio of number of businesses in 2008, while Istanbul's ratio increased to 32.5%, the ratio of other provinces decreased.

A situation parallel to the number of businesses can also be observed in the distribution of employment among regions. The regions, which accompanied Istanbul in terms of employment in 2001, were Bursa (9,7%), Izmir (7,1%), Kocaeli (5,8%) and Ankara (5,3%). These five regions provided 60% of total employment. The regions, which remained at the bottom in terms of the distribution of employment in 2001, were again Ağrı (0,2%), Mardin (0,2%), Van (0,3%) and Erzurum (0,3%) regions respectively. In 2008, there were not great changes among regions in this regard.

The regions, which provided the highest added-value next to Istanbul in 2001, were Kocaeli (17,1%), Izmir (14,7%), Bursa (9,1%) and Adana (5,5%) regions respectively. These five regions made up approximately 70% of total added-value. If Tekirdağ region, whose added-value was 5.1%, was added to these regions, the total added-valued, provided by these 6 regions, would rise to 75%. Considering that there are 26 NUTS 2 level regions, the added-value of the remaining 20 regions was only seen to make up 25% of the total added-value.

Table 2.14. Manufacturing Industry by NUTS 2 Regions (Shares)					
NUTS 2 Regions	Number of workplaces (%)		Employment (%)		Value added (%)
	2001	2008	2001	2008	2001
TR10 Istanbul	24,9	32,5	33	32,8	22,9
TR21 Tekirdag	2	1,7	4,3	4,1	5,1
TR22 Balikesir	2,6	2	1,6	1,6	1,8
TR31 Izmir	6,9	6,2	7,1	6,8	14,7

TR32 Aydın	5,5	4,2	4,5	3,5	2,1
TR33 Manisa	4,6	3,8	3,4	3,5	3,1
TR41 Bursa	6,6	5,9	9,7	10,2	9,1
TR42 Kocaeli	3,8	3,9	5,8	7,5	17,1
TR51 Ankara	6,9	6,1	5,3	5,8	3,9
TR52 Konya	3,7	3,6	2,4	2,6	1,2
TR61 Antalya	3,5	3,1	1,7	1,8	0,7
TR62 Adana	4,6	4,4	3,4	2,6	5,5
TR63 Hatay	3,1	3	2,1	2,3	0,8
TR71 Kirikkale	1,7	1,3	1,1	1,1	2,8
TR72 Kayseri	2,5	2,5	2,4	2,6	1,7
TR81 Zonguldak	1,3	0,9	1,4	1,3	1,7
TR82 Kastamonu	1,2	0,9	0,6	0,6	0,2
TR83 Samsun	3,5	3,1	2	2	1,3
TR90 Trabzon	3	2,6	2,3	1,6	0,8
TRA1 Erzurum	0,7	0,5	0,3	0,3	0,1
TRA2 Agri	0,4	0,6	0,2	0,2	0,1
TRB1 Malatya	1,3	1,4	0,8	1	0,8
TRB2 Van	0,6	0,8	0,3	0,4	0,1
TRC1 Gaziantep	3	3,2	2,8	2,5	2,1
TRC2 Sanliurfa	1,7	1,3	0,9	0,8	0,1
TRC3 Mardin	0,5	0,5	0,2	0,3	0,2
Total	100	100	100	100	100

Resource: Eşiyok & Sekmen (2012)

Organized industrial zones are defined as ‘special areas designed for industrial activities for facilitating infrastructure facilities and growth of industries such as transport, energy and other public services, and offering them in order to minimize their effects on the environment (Eşiyok & Sekmen, 2012). The attempts to establish Organized Industrial Zone (OSB) began in our country in the planned period, in other words, after the 1960s and the first OSB began to operate in Bursa in 1962. After seeing the positive contribution of Bursa OSB to the development of the region, Manisa, Konya, Bartın and Ankara OSBs were planned as from 1964. This policy changed into ‘an OSB for each province’ in subsequent years and it was decided to build OSB even in some districts (Dinler, 2014).

Data on the regional distribution of OSBs can be found in Table 2.14. The Black Sea Region ranked the first with 29 OSB in 2010. It was followed by Central Anatolia

Region with 28 OSB and the Marmara Region with 22 OSB respectively. There are a total of 143 OSBs throughout Turkey in 2010. The Marmara Region, which contained 50% of industrial enterprises in our country, covered only 15% of OSBs by the year 2010. By the year 2016, the number of OSBs in the Marmara Region rose to 80 and it was almost doubled in Aegean, Central Anatolia and the Black Sea Regions, but it increased at a very small rate in the East and Southeast Anatolia Regions. The Marmara Regions contained 28% of total OSBs and the Southeast Anatolia Region included 5.6% of them as of May of 2016.

Table 2.15.
Regional Distribution of Organized Industry Zones

Regions	Number of zones		Share (%)	
	2010	2016	2010	2016
Marmara (11 cities)	22	80	15,38	28,17
Aegean (8 cities)	21	48	14,69	16,9
Central Anatolia (13 cities)	28	48	19,58	16,9
Black Sea (18 cities)	29	47	20,28	16,55
Mediterranean (8 cities)	16	23	11,19	8,1
East Anatolia (14 cities)	13	22	9,09	7,75
S. East Anatolia (9 cities)	14	16	9,79	5,63

Resource: 2016 datas are from <https://osbbs.sanayi.gov.tr/>; 2010 datas are from Eşiyok & Sekmen (2012)

Small Industrial Sites (KSS) are described as “the sites that collect small businesses operating in similar lines of business in the same place by bringing manufacturing and repairing small industrialists who settled in the city in a scattered way and operated under inconvenient working conditions together in modern and ordered workplaces, developing solidarity and organization among them via improving their working conditions, meeting with their needs easily and economically and ensuring the development of the relationship between main industry and sub-industry by enabling the introduction of new technology in their businesses.” KSS data as of regions are presented in Table 2.15. KSS can be said to show a more homogeneous distribution compared to other data in our country. While the most number of KSSs was located in the Central Anatolia Region with 93, it was followed by the Black Sea Region with 91. While the lowest number of KSSs was located in the Southeast Anatolia Region with 37 as in other indicators, it was followed by the East Anatolia

Region with 52. The largest investment in terms of KSS is considered to be made in the East Anatolia Region with 16 in 2016.

Table 2.16.
Regional Distribution of Small Industrial Areas

Regions	Completed Projects (as of 2014)			Existing in 2015 Investment Program		
	Number	Number of workplaces	%	Number	Number of workplaces	%
Marmara (11 cities)	65	13848	14,76	1	170	3,60
Aegean (8 cities)	68	14865	15,85	1	60	1,27
Mediterranean (8 cities)	51	12796	13,64	9	1760	37,24
Central Anatolia (13 cities)	93	18441	19,66	8	788	16,67
Black Sea (18 cities)	91	15891	16,94	4	434	9,18
East Anatolia (14 cities)	52	8304	8,85	16	1359	28,76
S.East Anatolia (9 cities)	37	9645	10,28	4	155	3,28
Turkey total (81 cities)	457	93790	100,00	43	4726	100,00

Resource: Web site of General Directorate of Industry Zones
(<http://kss.sanayi.gov.tr/ServiceDetails.aspx?dataID=188>)

2.4.9. Agricultural production

The total value of goods in the agricultural sector is examined as crop and animal production. Regional shares related to agricultural production by the years 2007 and 2015 are given in Table 2.16. While an approximately 57 billion TL worth of production was obtained across Turkey in crop production in 2007, this amount was seen to rise approximately to 120 billion TL by the year 2015. 26% of these products were produced in the Mediterranean Region which has fertile agricultural lands like Cukurova. The Mediterranean Region was followed by the Aegean Region with 16% and the Southeast Anatolia Region, which increased its agricultural output with GAP, with 10% respectively. The lowest agricultural production took place in Istanbul with 0.4%. The concentration of industrial and service sectors in Istanbul had a great impact in this. Next to Istanbul came the East Anatolia Region which is very poor in terms of available agricultural lands. It can be said that no great changes occurred in these ratios and the share of the Black Sea Region increased a little by the year 2015.

Table 2.17. Regional Shares of Agricultural Production Values						
NUTS 1 Regions		Plant production value (1000 TL)		Livestocks value (1000 TL)		Animal products value (1000 TL)
		2007	2015	2007	2015	2007
TR1	Istanbul	0,4	0,3	0,7	0,5	3,1
TR2	West Marmara	7,7	6,7	10,3	9,0	11,6
TR3	Aegean	16,2	14,8	17,0	16,7	19,8
TR4	East Marmara	8,6	7,8	8,4	6,6	15,5
TR5	West Anatolia	7,7	9,7	7,1	8,7	7,8
TR6	Mediterranean	26,3	21,3	8,7	9,6	7,7
TR7	Central Anatolia	6,3	8,1	8,5	10,0	6,4
TR8	West Black Sea	7,8	8,3	9,6	8,0	8,4
TR9	East Black Sea	4,4	7,0	3,0	2,3	4,1
TRA	Northeast Anatolia	1,6	1,6	10,5	10,6	4,9
TRB	Ortaeast Anatolia	2,8	2,9	9,3	8,9	5,9
TRC	Southeast Anatolia	10,1	11,4	7,0	9,1	4,8

Resource: Turkstat website

While Turkey had an input of 24.6 billion TL in terms of the value of live animals in 2007, this amount rose to 73 billion TL in 2015. The biggest share in terms of regions belonged to the Aegean Region (17%) and then to the Northeast Anatolia Region (10.5%) in 2007 respectively. The lowest share again belonged to Istanbul. No dramatic changes were experienced in the regional shares of the regional live animal values in 2015.

In 2007, the total value of animal products produced in Turkey was approximately 23 billion TL. About 47% of this production was realized in the East Marmara, the West Marmara and Aegean Region. The Aegean Region took the first place in this field by realizing approximately 20% of the production. It was followed by the East Marmara Region with the share of 15.5%. The lowest share belonged to Istanbul with the ratio of 3%.

Per person agricultural production values are located in Table 2.17. While per person crop production value throughout Turkey was 805 TL in 2007, this figure rose to 1520 TL in 2015. The highest per person crop production value on regional basis belonged to the Mediterranean Region with 1676 TL. The lowest belonged to Istanbul with 17 TL. The highest value was seen in the Eastern Black Sea Region

with 3271 TL by the year 2015. The significant growth in the Central Anatolia, the Western Black Sea and Southeast Anatolia Regions can be seen in the table

Table 2.18.
Agricultural Production Values per Person by NUTS 1 Regions

NUTS 1 Regions		Kişi başına bitkisel üretim değeri (TL)		Kişi başına canlı hayvanlar değeri (TL)		Kişi başına hayvansal ürünler değeri (TL)
		2007	2015	2007	2015	2007
TR	Turkey	805	1520	349	928	325
TR1	Istanbul	17	23	13	24	56
TR2	West Marmara	1439	2358	829	1944	873
TR3	Aegean	991	1750	450	1202	489
TR4	East Marmara	759	1251	323	646	552
TR5	West Anatolia	660	1522	262	835	270
TR6	Mediterranean	1676	2542	240	697	199
TR7	Central Anatolia	946	2482	552	1884	390
TR8	West Black Sea	985	2201	531	1299	430
TR9	East Black Sea	1007	3271	300	655	375
TRA	Northeast Anatolia	419	888	1174	3534	506
TRB	Centraleast Anatolia	454	919	644	1700	377
TRC	Southeast Anatolia	801	1630	242	790	153

Resource: Turkstat website

While per person live animal value throughout Turkey was 349 TL in 2007, this figure increased by tri-fold and rose to 928 TL in 2015. The highest per person production in terms of per person live animal value was realized in the Northeast Anatolia Region with 1174 TL in 2007. The region, which approached the closest to this, was the Western Marmara Region with 829 TL. The composition between regions did not change too much in 2015.

While per person animal product value across Turkey was 325 TL in 2007, this figure rose to 707 TL in 2015. The highest per person animal product value was observed in the Western Marmara Region with 873 TL in 2007. This region was followed by the Eastern Marmara and Aegean Regions respectively.

2.5. Socio-Economic Development Index

One of the main objectives of the development plan is to develop national resources in a way to increase the economic and social benefit to the maximum and to reduce the inter-regional developmental differences to the minimum. Studies on the determination of socio-economic development levels of districts, provinces and regions are being conducted at regular intervals by DPT in order to monitor the development of spatial units at various scales in line with these objectives, to assign public resources and to ensure the guidance of incentives to be given to private sector investments (Ministry of Development, 2013). In this context, these studies were carried out at certain periods from 1968 until present the first of which was conducted in 1970 (Dinler, 2014).

SEGE-2011 study, which we will discuss in this study and is the latest work in this regard, was the basis for the regional distribution of the new incentive system implemented in 2012 (Ministry of Development, 2013).

SEGE-2011 was created by using a data set selected from economic, social and cultural areas and contained numerous variables and Principal Component Analysis. 61 variables under 8 headings were used in this sense. These indicators were listed as demographic state, employment, education, health, competitive and innovative capacity, financial, accessibility and quality of life. The most developed province socio-economically was found to be Istanbul and the least developed one was Mus province and the development level of provinces were determined to be 6 stages as a result of the study by using 81 provinces and 61 indicators (Development B., 2013).

Provincial groups graded in accordance with this division made and the rankings of provinces in socio-economic development index are included in Table 2.18. If the ranking was examined, out of 21 provinces in the first 3 categories, 20 of them, with the exception of Kayseri, were located in the Western Regions. The only province, located from the East and Southeast Anatolia Regions in the first three categories, was Gaziantep province in the 3rd stage. Almost all of the socio-economically least developed provinces were seen to be located in the Eastern Regions when looking at the fifth and sixth stages.

Sege rank	1. Degree developed provinces	Sege rank	2. Degree developed provinces	Sege rank	3. Degree developed provinces	Sege rank	4. Degree developed provinces	Sege rank	5. Degree developed provinces	Sege rank	6. Degree developed provinces
1	Istanbul	9	Tekirdag	22	Balikesir	34	Rize	51	Sinop	67	Diyarbakir
2	Ankara	10	Denizli	23	Manisa	35	Duzce	52	Giresun	68	Kars
3	Izmir	11	Bolu	24	Mersin	36	Nevsehir	53	Osmaniye	69	Igdir
4	Kocaeli	12	Edirne	25	Usak	37	Amasya	54	Cankiri	70	Batman
5	Antalya	13	Yalova	26	Burdur	38	Kutahya	55	Aksaray	71	Ardahan
6	Bursa	14	Canakkale	27	Bilecik	39	Elazig	56	Nigde	72	Bingol
7	Eskisehir	15	Kirklareli	28	Karabuk	40	Kirsehir	57	Tokat	73	Sanliurfa
8	Mugla	16	Adana	29	Zonguldak	41	Kirikkale	58	Tunceli	74	Mardin
		17	Kayseri	30	Gaziantep	42	Malatya	59	Erzurum	75	Van
		18	Sakarya	31	Trabzon	43	Afyon	60	Kahramanmaras	76	Bitlis
		19	Aydin	32	Karaman	44	Artvin	61	Ordu	77	Siirt
		20	Konya	33	Samsun	45	Erzincan	62	Gumushane	78	Sirnak
		21	Isparta			46	Hatay	63	Kilis	79	Agri
						47	Kastamonu	64	Bayburt	80	Hakkari
						48	Bartın	65	Yozgat	81	Mus
						49	Sivas	66	Adiyaman		
						50	Corum				

Resource: Ministry of development, the research of socio-economic development ranking of the cities and regions

CHAPTER III

INCOME CONVERGENCE ACROSS REGIONS IN TURKEY

One of the most important determinants of regional disparities which is dwelled on the previous two parts of the thesis is an absence of fair distribution of income between regions undoubtedly. In this section, the regional distribution of income between 1987 and 2011 in Turkey will be discussed. First of all, regional income data will be analyzed, then per capita income convergence analysis will be made on the basis of the regions. This analysis will be done under two topics. First, some static measures such as “Theil Index” which shows if the per capita GRDPs converge or not across regions will be used. In the second part, 'Beta Convergence' analysis which measures convergence in a dynamic way across regions will be used.

3.1. Data Set

Per capita GRDP datas were collected from Turkstat’s website. Data for the years 1987-2001, which is available for the 81 NUTS 3 level provinces in per capita GDP data are calculated again for 26 regions in the NUTS 2 level. These datas which are available at 1987 prices were updated as 1998 prices through our own calculations. Due to the fact that there is no regional income data for 2002 and 2003, these two years were excluded from the analyses. The datas between 2004 and 2011 have been taken from Turkstat website as regional GVA for 26 regions in the NUTS 2 level. Since the data is in the form of current prices between 2004-2011, they were calculated at 1998 prices again taking into account the level of the price of each region. Public investment datas were collected from The Ministry of Development in the form of NUTS 3 level provinces and they were transformed to the form of 26 regions in the NUTS 2 level.

3.2. The Analysis of Income Inequalities in Turkey with Static Measures

Inter-regional income inequality is difficult to measure and can not be put to any of the statistical methods that reveal the multifaceted cases alone (Shankar & Shah,

2003). Some of the previously used methods in the literature that can present different aspects of this problem will be conducted. These methods are as follows:

3.2.1. Maximum to minimum ratio

This is a comparison between the region which has the highest GRDP per capita and the region which has the lowest GRDP per capita. It is obtained from the formula in which the richest region is divided by the poorest region. If the result is small (close to 1), then it means that there are relatively equal incomes across regions.

$$\text{Max. to min. ratio} = \frac{\text{The highest GRDP per capita}}{\text{The lowest GRDP per capita}} \quad (1)$$

3.2.2. Coefficient of variation

Coefficient of variation is the most common method used to measure the regional income inequality in the literature. The CV is a measure of dispersion around the mean. It will be calculated in two different ways in this section. The first one is called as “simple coefficient of variation” which is an unweighted measure. Following Shankar & Shah (2003), it can be calculated as follows:

$$CV_u = \frac{\sqrt{\sum_i \frac{(y_i - \bar{y}_u)^2}{N}}}{\bar{y}_u} \quad (2)$$

Where, CV_u is unweighted coefficient of variation, y_i is GRDP per capita of region i , N is the number of regions and $\bar{y}_u$ is the mean of per capita GRDP. This measure takes values between 0 for perfect equality between regions to $\sqrt{N-1}$ for perfect inequality.

The second one is the weighted coefficient of variation which each regional deviation is weighted by its share in the national population. Since Williamson (1965), the weighted coefficient of variation has been mostly computed as follows:

$$CV_w = \frac{\sqrt{\sum_i (y_i - \bar{y}_u)^2 \frac{p_i}{P}}}{\bar{y}_u} \quad (3)$$

where, CV_w is weighted coefficient of variation P , is the national population and p_i is the population of i th region. CV_w takes values between 0 for perfect equality and $\sqrt{P - p_i / p_i}$ for perfect inequality where the i th region has all GDP.

3.2.3. Relative mean deviation

The relative mean deviation of GRDP per capita is computed as follows (Shankar & Shah, 2003):

$$R_w = \frac{\sum |y_i - \bar{y}| \frac{p_i}{P}}{\bar{y}} \quad (4)$$

where, R_w is a measure weighted by population proportions of the regions, y_i is the GRDP per capita of i th region and $\bar{y}$ is the mean of national GRDP per capita. Since CV is calculated by squaring differences, it could be too sensitive to outliers. In order to check CV results, we use relative mean distribution. This measure varies from 0 for perfect equality to 2 for perfect inequality.

3.2.4. Theil index

Theil index will be used to measure regional income inequality as a final method. Following Theil (1967), it can be computed as follows:

$$T = \sum_i x_i \log \left(\frac{x_i}{q_i} \right) \quad (5)$$

where, x_i is the share of GDP of region i and q_i is the share of population of region i . As it draws near to zero, we conclude that inequality reduces.

3.2.5. Results

The results of five methods we used to measure inter-regional income inequalities in Turkey are given at Table 3.1. According to the results of MMR method, the difference between the regions which have the highest and the lowest per capita income is about 7.3 times. MMR, which has followed a fluctuating course in the following years after 1987, increased in times of crises and decreased in other periods. The income inequalities increased especially between 1991 and 1993 and then decreased again after the devaluation made in 1994. If we look at the results of MMR ratio which exceeded 7 in 1997 and 2000, it can be seen that the income inequality didn't reduce and stayed on the same level during 1990s. This ratio was gradually reduced between 2004 and 2010 below 4 and then increased again in 2011. But one of the disadvantages of MMR arises here. Very large MMR rates may not reveal large differences across all regions. The presence of outliers among the most

developed and the most underdeveloped regions lead to some problems in the interpretation. So we need to look at the results of other methods.

Table 3.1. Regional Income Inequalities by Years					
Year	Max to Min Ratio (MMR)	Unweighted Coefficient of Variation (CV_u)	Weighted Coefficient of Variation (CV_w)	Relative Mean Deviation (R_w)	Theil Index (T)
1987	7,309	0,461	0,447	0,383	0,044
1988	6,791	0,449	0,429	0,372	0,041
1989	7,016	0,456	0,429	0,377	0,042
1990	6,669	0,454	0,426	0,373	0,041
1991	7,127	0,443	0,416	0,361	0,039
1992	7,657	0,443	0,411	0,358	0,038
1993	7,256	0,459	0,425	0,371	0,041
1994	6,320	0,442	0,401	0,351	0,037
1995	6,979	0,460	0,420	0,367	0,040
1996	6,892	0,446	0,410	0,352	0,039
1997	7,162	0,456	0,422	0,366	0,041
1998	6,974	0,449	0,409	0,358	0,039
1999	6,436	0,434	0,395	0,348	0,036
2000	7,410	0,471	0,429	0,379	0,043
2001	6,754	0,447	0,404	0,354	0,037
...	...	...	...	...	...
2004	4,288	0,402	0,401	0,367	0,036
2005	3,992	0,389	0,386	0,352	0,034
2006	4,012	0,395	0,389	0,356	0,034
2007	3,864	0,393	0,392	0,354	0,035
2008	3,877	0,391	0,387	0,347	0,034
2009	3,777	0,366	0,368	0,331	0,031
2010	3,402	0,351	0,354	0,322	0,028
2011	3,790	0,370	0,369	0,335	0,031

If the values of CV_u are examined, the deceptive impact of MMR values will be seen. According to the results of this method, it can be seen that there is not a serious change between 1987 and 2001 as it was in MMR. It can be pointed out that there is an increase in the crisis years and a decrease in other periods. Moreover, one can say that there is a downward trend after 2004 in terms of CV_u and there is an

improvement in the sense of income inequalities. It can be seen from the table that the same thing is valid for CV_w if the fourth column is examined.

We conducted the R_w method because coefficient of variation method is very sensitive to outliers. If the results of R_w are examined carefully, it would make more sense. There was almost a 10 % decline in terms of income inequality between 1987 and 2011 according to CV_u and CV_w . According the R_w results, income inequalities across regions are significantly lower in 1987, the beginning of time period dealt with. Moreover, the total decline in the time period which we deal with is calculated as 0,05 approximately. While R_w declined to 0,354 from 0,383 between 1987 and 2001, it decreased to 0,354 from 0,367. If a general assessment is done, inter-regional income inequalities which had been fluctuated during 1990s started a downward trend after 2000. The same path was tracked according to Theil index results as it can be seen from the table.

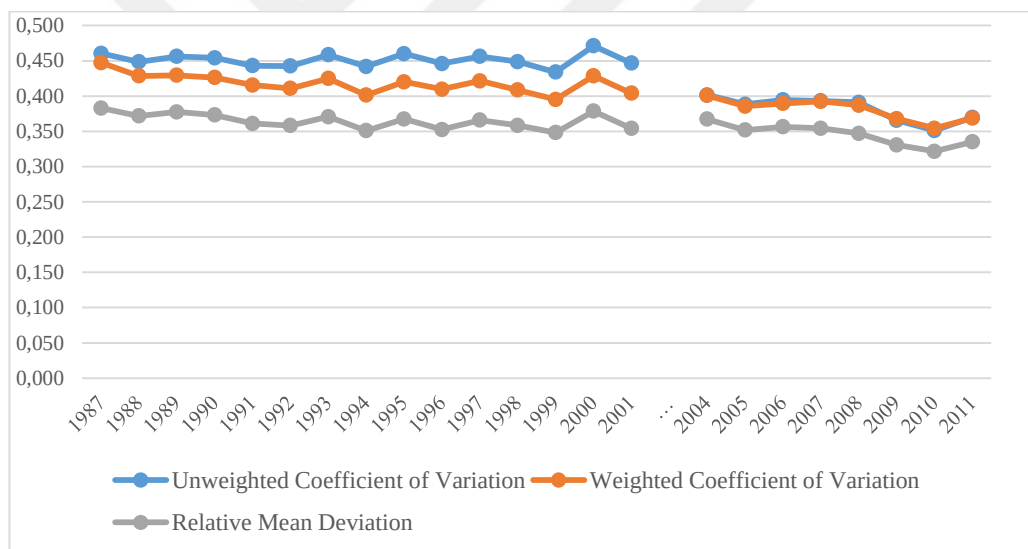


Figure 3.1. Regional Income Inequality by Static Measures during Period

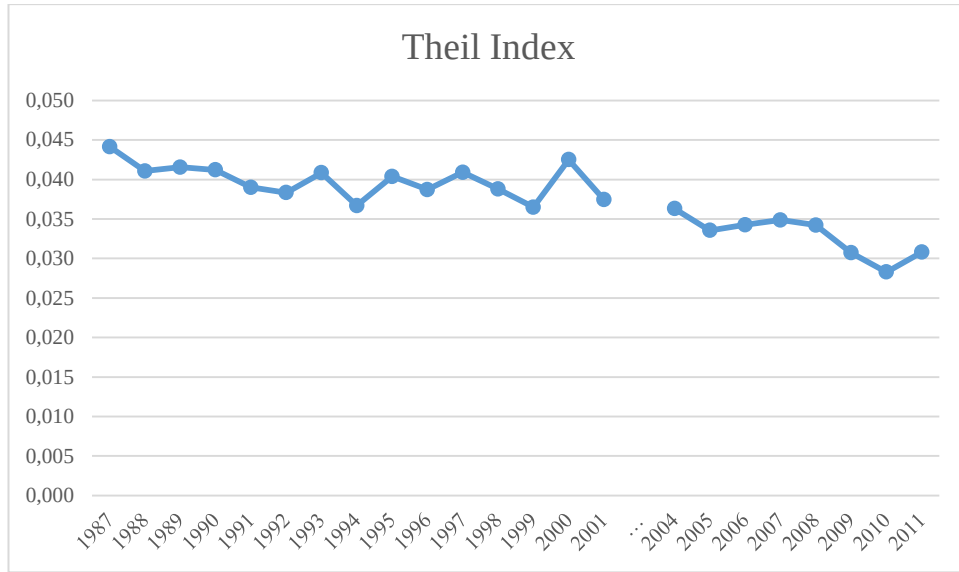


Figure 3.2. Regional Income Inequalities by Theil Index

The trend of inter-regional income inequalities can be seen clearly from Figure 3.1 and Figure 3.2. The curves, which had a fluctuating course between 1990 and 2000, entered into a decline trend in 2001 and this trend had continued from 2004 to 2010. It can be observed from the figures that income inequalities increased again in 2011.

3.3. The Analysis of Regional Income Inequalities with Dynamic Measures

The change of income inequalities in Turkey during the years under consideration will be examined in this section through a dynamic method. The convergence analysis which is based on neoclassical growth theory and is used for measuring income convergence will be used. This analysis will be conducted through panel data method for 26 NUTS 2 level regions for 1987-2011 time period.

3.3.1. Convergence analysis: Theoretical framework

In neoclassical growth models, economists, such as Solow (1956), Cass (1965) and Koopmans (1965), argued that a country's growth rate in terms of per capita income was inversely proportional with the initial per capita income of that country. They suggested that the poor countries are in tendency to grow faster compared to the rich countries and per capita income levels between countries would converge one another in the long term if the countries especially carry structural similarities in terms of parameters such as technology and preferences (Abdioğlu & Uysal, 2013).

According to the neoclassical growth model suggesting that factors, such as population growth, capital accumulation and technology, would cause convergence between the countries, the marginal product of capital in poor countries with initially low capital/labor force is higher compared to rich countries for this reason (Barro, 1989). International capital will move towards these regions where the return of capital is higher, in other words, the profit rate is relatively higher. This will result in the equalization of capital/labor force together with factor prices. The income of poor countries will increase faster than that of rich countries and income convergence between the countries will occur in the future because of these reasons (Jones, 2002).

There are basically two different types of convergence: Beta and sigma convergence. Beta convergence, brought to the literature with Baumol (1986)'s study, is based on the investigation of the relationship between growth rates of per capita income of the economy and per capita income levels in the initial years. If this relationship has a positive sign, the divergence, if it has a negative sign, the convergence comes into question (Ersungur & Polat, 2006). Sigma convergence is based on the investigation of per capita income dispersions of the economy. The criterion used therein is the standard deviation. If the standard deviation of per capita income between the countries or regions falls, the sigma convergence occurs in this case (Young et al., 2008).

It is possible to go for two distinctions in beta convergence as conditional and absolute. Absolute beta convergence hypothesis asserts that there is a negative relationship between the initial level of income and growth rates and therefore poor countries will grow faster. Beta convergence for sectional data sets across countries or regions can be searched through the following model (Barro & Sala-i Martin, 1992):

$$\frac{1}{T} \log \left(\frac{y_{i,t}}{y_{i,t-T}} \right) = \alpha - \left[\frac{1-e^{-\beta T}}{T} \right] \log(y_{i,t-T}) + u_{i,t} \quad (6)$$

Where, $y_{i,t}$ is per capita GRDP of region i at time t and $y_{i,t-T}$ is per capita GRDP of region i at the beginning of time interval. If β is found with a positive sign as a result of the above analysis, then it can be concluded that convergence occurred between the regions used in the analysis.

Conditional beta convergence hypothesis assumes that the negative relationship will occur with the similarity of some structural characteristics such as government policy

in the interested economies and human capital. While it is assumed that there is a difference between similar structural factors such as technology, preference, etc. in conditional convergence in economies, the factors are assumed to be identical in absolute convergence. Therefore, additional control variables are added to the model used in beta convergence in order to test its conditional beta convergence and this type of convergence is tested as follows:

$$\frac{1}{T} \log \left(\frac{y_{i,t}}{y_{i,t-T}} \right) = \alpha - \left[\frac{1-e^{-\beta T}}{T} \right] \log(y_{i,t-T}) + \phi x_{i,t} + u_{i,t} \quad (7)$$

Where $x_{i,t}$ is the control variable at time t which shows the structural differences between economies. If a positive coefficient will be obtained for β , one can interpret that there is convergence across regions or economies for the time interval used in the analysis.

3.3.2. Literature review

There are many international and national empirical studies in the literature testing convergence hypothesis on the basis of regions and countries. Barro & Sala-i Martin's (1991) study, covering OECD countries during 1950-1985 period, is considered to be a pioneer in this field. Convergence was found within this specified period among the OECD countries as a result of this study. Again, Barro (1991), in his study examining 98 countries, concluded that there was convergence among these countries in question between the years 1960 and 1985. In addition to this, Barro & Sala-i Martin (1991), Giertz & Mehta (1996) and Persson (1999) reached the conclusion that there was convergence among the US states in the analysis they performed during 1880-1988, 1950-1993 and 1929-1990 periods respectively. Bergström (1998), in his analysis that he performed for 1945-1990 period, found out that there was absolute convergence in Sweden during this period. Armstrong (1995) reached the conclusion that there was a low rate of convergence in his study conducted in 85 regions connected to EU countries during 1950-1992 periods. Coulombe & Lee (1995) found conditional convergence in Canada between the years 1961 and 1991. Azzoni (2001) reached the conclusion that there was absolute convergence in Brazil between the years 1939 and 1995. Kangasharju (1998) found that there was absolute convergence between the years 1934 and 1993 in Finland; Siriopoulos & Asteriou (1998) concluded that there was no absolute convergence in Greece between the years 1971 and 1996; Terrasi (1999) discovered that there was

conditional convergence in Italy during 1953-1993 periods, and Yudon & Weeks (2000) found that there was no convergence by no means during 1953-1997 periods in China. Karagöz (2016) investigated if there was a convergence between Turkey and EU-15 in terms of GDP performances and found a strong evidence for convergence.

There are also studies researching convergence hypothesis at regional and provincial level in Turkey. Filiztekin (1998) conducted his study covering the period of 1975 and 1995 on the basis of 65 provinces and 7 sectors. He found as a result of the study that there was no absolute convergence between provinces, but there was a convergence on sectoral basis. Berber et al. (2000) reached the conclusion in his study in which he tested convergence hypothesis on the basis of 7 regions for the period of 1975 and 1997. Erk et al. (2000), Altınbaş et al. (2002), Karaca (2004), Gezici & Hewings (2004), Çözel (2007), Halaç & Kuştepli (2008) and Abdioğlu & Uysal (2013) reached the conclusion of divergence in their studies conducted at difference regional levels and time periods. Sağbaş (2002) reached the conclusion in the study he conducted in the period of 1986 and 1997 on the basis of 67 provinces that there was convergence between the provinces. Doğruel & Doğruel (2003) found in their analysis conducted during the period covering the years between 1987 and 1999 on the basis of 67 provinces that there was convergence between the provinces. Karaalp & Erdal (2012) found that there was convergence between provinces and regions in the study they conducted on 73 provinces and 7 regions during 1993-2001 periods.

3.3.3. β convergence

In this study, the panel data analysis is used in order to measure the income convergence between regions. Panel data analysis contains two dimensions which they are cross-section and time series. These dimensions allow the handling of a combination of both time and cross-sectional dimensions of the growth process (Zeren & Yilanci, 2011). β convergence analysis which explores the convergence of income for the countries and regions is made as below following Sala-i Martin (1995)'s exposition:

$$\ln(y_{it}) = \alpha + (1 - \beta)\ln(y_{i,t-1}) + u_{i,t} \quad (8)$$

Where, $y_{i,t-1}$ is the per capita GRDP for region i at time $(t-1)$, y_{it} is per capita GRDP of region i at time t . Manipulating (8) yields:

$$\ln\left(\frac{y_{it}}{y_{i,t-1}}\right) = \alpha + \beta \ln y_{i,t-1} + u_{i,t} \quad (9)$$

Where, $y_{i,t-1}$ is the per capita GRDP for region i at time $(t-1)$, y_{it} is per capita GRDP of region i at time t , $\frac{y_{it}}{y_{i,t-1}}$ is the growth rate of the region i at time t . Some variables which indicates the structural differences across regions are added to this equation:

$$\ln\left(\frac{y_{it}}{y_{i,t-1}}\right) = \alpha + \beta \ln y_{i,t-1} + \phi x_{i,t} + u_{i,t} \quad (10)$$

where $x_{i,t}$ is the control variable which shows the structural differences between economies. As was mentioned before, β convergence is the negative relationship between income level at the beginning of the time ($\ln y_{i,t-1}$) and the growth rate in the period that followed. $x_{i,t}$ variable is excluded from the model in absolute convergence analysis and it is assumed that the beginning conditions are all the same for all regions.

In our model, $x_{i,t}$ variable is public investments for all regions. If public investments effect the growth rate of underdeveloped regions more than the growth rate of developed regions, it contributes to convergence positively. It is expected of public investments to make a positive contribution to the economic growth as an assumption (Sağbaşı, 2002). Filiztekin (1998) and Sağbaşı (2002) used this variable in conditional convergence analysis in their study.

3.3.4. Results

In this part of the study, fixed effects panel data analysis has been used to investigate the income convergence between regions. As 2002 and 2003 datas can not be obtained the analysis period has been divided into two periods, and examined as 1987-2001 and 2004-2011. STATA 12 software has been used to analyze the results in this study.

Which model is going to be used has a great importance in panel data analysis. There are three types of panel data analysis method: Pooled regression, Fixed-effects model and Random-effects model. A series of tests should be applied to the available data

to find the most appropriate method. For this reason, the data is analyzed first with pooled regression method and then with random-effects model. After that, the Breusch-Pagan LM test has to be applied to understand which one is appropriate. As a consequence of this test, the appropriate one of these two models is chosen. Then, the data will be analyzed again with fixed-effects model and in accordance with the previous stage of the test. Then Hausman test is applied to decide between these two methods.

In our study, these methods are applied respectively and fixed-effects model has been selected as suitable for the available data. The results obtained from the analysis are given in Table 3.2.

Table 3.2.
Fixed-effects Model Coefficient Estimations

Variables	Absolute convergence		Conditional convergence	
	1987-2001	2004-2011	1992-2001	2004-2011
Constant	-0.2409* (-0.0325)	2.9261* (-0.3050)	2.5941* (0.5023)	3.6951* (0.3129)
$\ln y_{i,t-1}$	1.6080* (-0.21569)	-0.4135* (0.0436)	-0.3930* (0.0785)	-0.6248* (0.0520)
$x_{i,t}$			0.0038 (0.0028)	0.0553* (0.0088)

Standard errors of estimates are in parentheses. * denotes significance at 1% level.

The coefficients of $\ln y_{i,t-1}$ variable reveals that if there is convergence or divergence across regions in terms of per capita incomes over time periods which can be seen at table. If the sign of the coefficient is negative, it can be said that there is convergence and vice versa. According to this information, absolute convergence hypothesis which is based on the assumption that each region has exactly the same characteristics at the initial period could not be confirmed for 26 regions in the NUTS 2 level in Turkey between 1987 and 2001. The analysis came to the conclusion that there is divergence in this period and this result is significant at 1% confidence level. The sign of this coefficient is negative for 2004-2011 period. That is why, per capita income levels of the regions has converged in this period in a statistically significant way.

The conditional convergence analysis which also includes public investments variable has been conducted for two periods. According to results, it can be said that there is convergence for both periods. In the 1992-2001 period, $\ln y_{i,t-1}$ variable has a negative sign and this result is statistically significant at 1% confidence level. Even though the public investments variable has a positive sign, it is not statistically significant. So, we can say that convergence has occurred in this period but public investments variable has no impact on this. For 2004-2011 period, $\ln y_{i,t-1}$ variable has a negative sign and this result is statistically significant. Meanwhile, public investment variable's sign is negative and significant at 1% confidence level. So, it can be said that that public investments have a positive impact on regional income levels.

CONCLUSION

The process of economic growth and development which has gained great importance after the industrial revolution brought too many problems with it. The unfair distribution of income is one of the most important of these problems. By force of the economic development process, the development begins in the regions which have some specific advantages such as natural resources. Therefore, income of these regions increases more than other regions. The increase of income led to the development of these regions on other issues such as education. The remaining regions failed behind in terms of variables such as education, health and especially income level.

The regional imbalances in Turkey are elaborated in this thesis. The thesis consists of three chapters. The theoretical framework of the thesis is handled in first chapter. First of all, the definition of region term from different perspectives is explained in this sense. After that, the categorization of region is investigated from the viewpoint of macroeconomics and in terms of development. While the regions are divided as homogenous, polarized and planned regions from macroeconomic perspective, they are divided as less developed and developed regions according to the development levels of them. After that, the regional development concept is explained and some theories about regional development are handled. The concept, occurrence of and changes caused by regional imbalances are examined. At the end of the chapter, the concept of regional development policy is scrutinized.

In the second chapter, the case of the regional imbalances in Turkey is examined. First of all, the reasons of regional imbalances are explained as geographical, historical and cultural reasons. The policies worked out and applied on regional imbalances in Turkey are explained. In this sense, the handling of regional imbalances in FYDPs is clearly revealed and the regional development projects especially Southeastern Anatolian Project (GAP) which are worked out and applied, are examined. At the end of the chapter, the situation of regional imbalances in the last decades is explained by some specific indicators. These indicators are as follows:

Population and urbanization, foreign trade, education, employment, health, energy consumption, poverty, industrial structure and agricultural production. It has been seen that the regional imbalances are continuing in point of these indicators except education and health.

In the third chapter, income inequalities which exist across regions in Turkey are analyzed. In the analyses which were conducted for 26 regions in the NUTS 2 level, the existence or absence of the per capita GRDP convergence were revealed first with some static measures and then with convergence analysis. Because of the fact that regional income data for 2002 and 2003 could not be reached, the 1987-2011 period divided into two periods and were examined in the form of 1987-2001 and 2004-2011 periods.

First, income inequalities across the regions of Turkey were calculated over the years with some static measures. 5 different measures as maximum to minimum ratio, unweighted and weighted coefficient of variation, relative mean deviation and their index have been used. As a result of the calculations, according to each of these measures, a fluctuating course was followed during the 1990s in terms of income inequality and there has been no improvement in this period. After the 2000 economic crisis, income inequalities started to decline. Between 2004 and 2010, this decline trend has continued and income inequalities across regions reduced. However, an increase was seen again in 2011.

The convergence analysis which was conducted by using panel data analysis has come to similar conclusions for this period. There are two types of β convergence analysis in literature which their names are absolute and conditional convergence. The first one of these is absolute convergence and it is performed with the thesis of there is no structural differences between regions initially. The analyses which were made through fixed-effects model reveals that there have been occurred absolute divergence across regions of Turkey in a statistically significant manner between 1987 and 2001. Between the years 2004-2011, it was understood from the analysis results that the absolute convergence has been occurred. In the second analysis,

conditional convergence which based on the idea that there are some structural differences across regions was tested. In this test, public investments variable which is thought to affect Turkey's regional per capita income is used. In analysis that included this variable has reached the conclusion that convergence was experienced in both the 1992-2001 and 2004-2011 period. Over the period of 1992-2001, public investments variable has not had a significant impact on convergence but there is a significant and positive impact for time period 2004-2011.

To conclude, there are huge differences across regions in Turkey and the applied regional policies has failed to overcome these problems to a large extent. Cultural codes, the inefficacy of education level and the non-participation of localities on regional policies are the most important reasons on this failure. The localities must be involved in preparations and applications of regional policies. Moreover, the quality and context of the education should be reorganized concordantly based on the new global needs.

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