

Regional Inequalities among NUTS Level-1 Regions and Solution Efforts of Turkey

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Regional development and regional planning subjects are very closely linked with the development projects in Turkey as much as in the world. The main applications and studies are usually based on the elimination of disparities among regions. Within this framework, this study has firstly aimed to set out the regional development objectives in Turkey. Secondly, we tried to find out the effect of new regional approaches on Turkish regional structure. Hence, as an approach different from other studies, we focused on NUTS (Nomenclature of Territorial Units for Statistics) regions instead of geographical units (regions) studies. In the following parts of the study, thirdly, the efforts of Turkey about the regional development have been discussed and assessed by using Neoclassic Growth Model in terms of per capita income distributions for new region groups. To compare the results of analysis among regional units, the most important development projects for Turkey were also taken as a different approach unlike other studies. Previous studies based on geographic regions showed that the basic tendency of per capita income distribution is 'Divergence' unlike expected 'Convergence' in Turkey, but in our study, we found more optimistic results for Turkey, in which per capita income distributions have a tendency to converge after 1997.

Key words: *Regional Development, Turkey, NUTS, Regional Development Projects, Convergence*

1 Introduction

Mainly, the applications of the regional development in the world have been built to achieve economic, social, and cultural developments by decreasing the inter-regional differences (Genli and Yirmibesoglu, 2003). These applications can be segregated under the some basic priority targets, in which these are priority development sectors, priority areas for development, and priorities based on development projects.

During 1960-1970, classic regional policies (generally state controlled policies) were dominated in the world and Turkey under the Keynesian principles such as financial incentive for firms, infrastructure

investments, controlled industrial complexes by state, and the control of manufacturing industry.

On the other hand, after 1970s with the petroleum crises, the regional approaches and the role of state on economic sectors started to be discussed and changed by decreasing the implementation of Keynesian policies. Thus, in 1980 and following years some other new approaches were placed on the regional development policies such as globalization, regionalization, and localization. And presently, we see that these issues have been combined under the framework of "Glocalization" which is to consider globally by following the global facts in the international relations, to integrate with global economies instead of autarky, and to strengthen the local forces extremely in place of directing the national economy and policy. In this way, regionalization

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has indicated the importance of decentralization to support local democracies in the name of regional development (Aktan, 1998).

For testing the regional development efforts of countries, there are many applications and models in the literature. In this study as a methodology, the regional convergence model was applied. This model is also called as Neoclassical Convergence Theory which is one of the most suitable applications to compare the developmental level of regions. Similarly, in the literature, there are several applications and improvements about the convergence theory, especially through the addition of further explanatory variables (Rey and Montouri, 1999; Lopez-Bazo et al., 1999; Azzoni, 2001) and the role of spatial effects (Quah, 1997; Lall and Yilmaz, 2001).

The examination of convergence tendencies across different countries has indicated different results, especially in the developing and periphery countries of the EU (European Union) (Gezici and Hewings, 2001). Moreover, Barro and Sala-i-Martin (1991, 1992) observed convergence tendency in the analysis of OECD countries and Japan, etc. Similar finding was also observed in the case of India by Saray and Cashin (1996). But some other researchers also observed divergence findings in their studies such as Bernard and Durlauf (1995) for OECD countries, Siriopoulos and Asteriou (1998) for Greece, Berber, Yamak, and Artan (2000), and Erk, Ates, and Direkci (2000) for Turkey, etc.

Firstly, as the beginning step of the study, Turkey was investigated from its historical perspective and regionalization efforts to understand its regional development background. Secondly, we tried to state socio-economic conditions and development projects in the regions to elucidate the necessity of the study. And thirdly, the most comprehensive indicator as also mentioned above, regional per capita income values were chosen as a key analysis item by focusing on the important development project areas. In the final part of the study, we concluded the results of analysis with our assessments.

Consequently, for attaining the world standards, the presence of interregional disparities has been one of the most important issues and concerns in Turkey. Besides, convergence as a policy item, the result of regional applications to find out the solution ways will have

additionally importance for Turkey's membership to the EU as much as integration with world standards.

2 Regional Development in Turkey

2.1. Background of Regional Development Efforts of Turkey

In terms of regional development in Turkey, firstly, regional planning works were started in 1950s for pilot areas and aimed to solve different regional problems. Nevertheless, after the establishment of SPO (State Planning Organization) in 1960, the perspective of development plans and works were changed with Five-Year Development Plans and institutionalization efforts were also accelerated in the following years, however, regional issues were usually penetrated in the Five-Year Development Plans.

Nowadays, the number of regional arrangements has reached more than ten projects since 1950s, and some of them completed projects but other projects are still under construction. Similarly, Five-Year Development Plans has been published eight times since 1963, which correspond to more than forty years.

Currently, regional arrangements are directly related to local administration as a part of Turkey's obligations to access to the EU (European Union), in which necessary legal and administrative arrangements were firstly outlined in the Eighth Five-Year Development Plan unlike other plans.

These developments and changes during years, of course, affected the condition of regions. For this reason, in the following parts of the study focusing on regional indicators, we will investigate some project areas in detail to understand and discuss the returns of the implementations for people.

2.1. Regionalization in Turkey

As briefly explained in the previous part, with the integration to the EU, Turkey has also entered into a new phase in terms of regional issues. Thus, in the past regional policies and implementations, Turkey tried to establish a balanced social and economic distribution among its developed and underdeveloped regions.

On the other hand, in recent years, Turkey as a candidate country has become a region within the EU. This situation has naturally brought additional

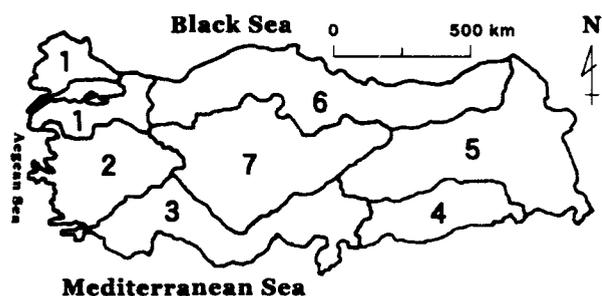
obligations on the governments while balancing interregional inequalities, in which it has to be achieved at the international base as well.

As shown in Figure 1, the country is divided into seven different geographical regions which comprise 81 provinces in terms of topography, climate, economy, and public service requirements. These are the Marmara (11 provinces), Aegean (8 provinces), Mediterranean (8 provinces), Southeastern Anatolia (9 provinces), Eastern Anatolia (14 provinces), Black Sea (18 provinces), and Central Anatolia (13 provinces) Regions.

Furthermore, as shown in Figure 2, the country has been divided 12 NUTS (Nomenclature of Territorial Units for Statistics) level-1 regions, 26 NUTS level-2 regions and 81 NUTS level-3 regions in the base of adaptation with the EU in September 2002. NUTS level-3 is based on 81 provinces; NUTS level-2 was defined by grouping the neighbor provinces in the scope of level-3 and NUTS level-1, similarly, was constituted by grouping the NUTS level-2 regions.

As a different feature of this study, we have focused on NUTS level-1 regions and especially some key regions which have important regional development project. With this research point, we have also aimed to discuss the returns and advantages of the project implementations for regions, which will give us an opportunity to compare it with previous studies based on geographical approaches.

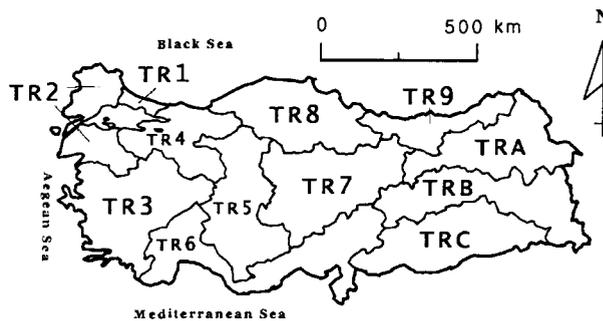
3 Socio-Economic Conditions and Development Projects in the Regions



- 1. Marmara Region 2. Aegean Region 3. Mediterranean Region
- 4. Southeastern Anatolia Region 5. Eastern Anatolia Region
- 6. Black Sea Region 7. Central Anatolia Region

Fig. 1 Geographical Regions in Turkey

Source: SPO (2004a)



- 1. TR1 Istanbul Region 7. TR7 Central Anatolia Region
- 2. TR2 Western Marmara Region 8. TR8 Western Black Sea Region
- 3. TR3 Aegean Region 9. TR9 Eastern Black Sea Region
- 4. TR4 Eastern Marmara Region 10. TRA North Eastern Anatolia Region
- 5. TR5 Western Anatolia Region 11. TRB Central Eastern Anatolia Region
- 6. TR6 Mediterranean Region 12. TRC South Eastern Anatolia Region

Fig. 2 12 NUTS Regions in Turkey

Source: SPO (2004b)

3.1. Socio-Economic Conditions

As briefly explained before, Turkey has recently twelve NUTS level-1 regions (Figure 2) and there are significant economic and social differences between NUTS regions. In general, these inter-regional differences have arisen from the inadequate distribution and inefficient use of resources, unfavorable topographic structure, severe climatic conditions, neutralization from domestic and foreign markets, and insufficient investments. Physically, these differences have resulted in uncontrolled immigration and dispersed settlements and caused additional problems such as unemployment increases, inadequate infrastructure, shanty suburbs, and environmental problems in the metropolitan areas. Similarly, as a chronic problem, income indicators show an irregular tendency which is continuously resulting in a gap between less and the most developed regions of Turkey (Table 1).

Thus, if the distributions of regional GDP in 1987, 1995, and 2001 years are compared (Table 1), it is clearly seen that there is a substantial difference in the regions among the highest and lowest shares. Also, only Istanbul Region has a tendency of regional GDP to decrease in both periods about 4% in 1987-95 and 2% in 1995-01. As one of the most developed regions Istanbul, this finding, in some way, could be interpreted optimistically, if other developed regions followed it, because in the opposite parallel, there would be an

Table 1 Regional GDP per capita Incomes

Code	NUTS (level-1) Regions	1987	1995	2001	1987-1995 % Change	1995-2001 % Change
TR1	Istanbul	2,451,686	2,361,306	2,304,744	-0.04	-0.02
TR2	Western Marmara	1,524,695	1,937,505	1,904,794	0.27	-0.02
TR3	Aegean	1,747,793	1,959,202	1,953,715	0.12	-0.00
TR4	Eastern Marmara	1,989,270	2,310,788	2,423,605	0.16	0.05
TR5	Western Anatolia	1,522,287	1,807,423	1,676,860	0.19	-0.07
TR6	Mediterranean	1,325,582	1,418,954	1,406,364	0.07	-0.01
TR7	Central Anatolia	937,135	1,083,905	1,080,717	0.16	-0.00
TR8	Western Black Sea	947,305	1,011,937	1,264,006	0.07	0.25
TR9	Eastern Black Sea	854,567	1,132,445	1,053,000	0.33	-0.07
TRA	North Eastern Anatolia	505,719	531,171	563,501	0.05	0.06
TRB	Central Eastern Anatolia	551,686	597,059	596,964	0.08	-0.00
TRC	South Eastern Anatolia	827,709	817,163	927,567	-0.01	0.14
Average		15,187,421	16,970,853	17,157,838	0.12	0.01

Source: SPO (1999) for 1987 and SPO (2003c) for 1995 and 2001 years.

Note: Units are in Thousand TL, at 1987 prices.

increase tendency for underdeveloped regions. These indicators will be also investigated in detail at the following part in terms of 'Neoclassical Convergence Theory'.

Other noteworthy points in Table 1, North Eastern and Central Eastern Anatolia Regions are economically worse regions than the others and they do not show regular growth rate. Conversely, only three regions of Eastern Marmara, Western Black Sea, and North Eastern Anatolia have positive changes in the both periods of 1987-1995 and 1995-2001. Finally, with these findings as seen in Table 1, it is very difficult to reach a conclusion that regions have a stable growth or development indicators.

3.2. Development Projects in the Regions

Hence, for solving the regional development inequalities, some regional policies have been created by Turkish governments to extend the development over the

country, in which many plans and projects were applied during long years.

In terms of regional development, the most important and comprehensive projects are as follows;

3.2.1. Southeastern Anatolia Project (GAP)

Southeastern Anatolia Project covers 9 provinces in the Southeastern Anatolia region with a total population around 6.2 million. The major objectives of this comprehensive project are to mobilize regional resources, create new employment opportunities, increase income levels, develop urban centers, and thus ensure economic development and social stability in the region. For this reason, the project basically covers investments in hydroelectric power plants on the Euphrates and Tigris rivers, urban and rural infrastructure, agricultural infrastructure, irrigation canals, transportation, industry, education, health, housing, and tourism.

3.2.2. Zonguldak-Bartın-Karabük (ZBK) Regional Development Project

Zonguldak-Bartın-Karabük Project covers 3 provinces in the Western Black Sea Region. The major objectives of this project are to analyze the economic and social impact of the capacity decrease of the Turkish Hard Coal Authority (TTK in Turkish acronym) on the region, the privatization of the Karabuk and Ereğli Iron and Steel Enterprises, and determining new investment opportunities for promoting private sector involvement.

3.2.3. Eastern Anatolia Project (DAP)

Eastern Anatolia Project covers 16 provinces in three NUTS level-1 regions which are Middle Eastern Anatolia, North Eastern Anatolia, and Eastern Black Sea Regions (only one province). The major objectives of this project are to increase income per capita and narrow the gap between the region and the national economy, to increase employment, to decrease out-migration from the region, to accelerate the capital accumulation within the region, to support local entrepreneurship, to mobilize the economic potential of the region, to integrate the region economically with the other regions, and to raise the welfare level and the quality of life in urban and rural areas.

3.2.4. Eastern Black Sea Regional Development Plan (DOKAP)

Eastern Black Sea Regional Development Plan covers six provinces in the Eastern Black Sea Region. The major objectives of this project are to strengthen the economic structure, to promote regional integration through minimizing intra-regional disparities and out-migration, and to restore and sustain resource and environmental capacity as a basis for diversifying socio-economic activities (Sarica, 2001).

In Table 2, the scope of regional development projects is also represented comparatively. According to the covered area, the widest projects is DAP, but one of the biggest projects of the world and the most important and costly project is GAP. For this reason, the expectations of Turkey from GAP are more extensive

because it was also planned as a multi-regional development project which means the other regions of Turkey will be affected positively by GAP.

On the other hand, for measuring the effort of regional development projects above, the percentage share of regions was comparatively given in Table 3 according to years. In Table 3, it is observed that five underdeveloped regions (Southeastern Anatolia, Western Black Sea, Central Eastern Anatolia, North Eastern Anatolia, and Eastern Black Sea) are still under Turkey average according to the GDP per capita incomes even though they are implementation areas of the main regional development project. For this reason, it is fairly difficult to say that the project implementations could bring the solution ways together as expected for underdeveloped regions in the point of reaching the developed regions' income levels.

The Lorenz Curve construction also gives us a rough measure of the amount of inequality in the income distribution. The measure is called the Gini Coefficient. Computation of the Gini Coefficient is illustrated by Figure 3, and it is observed that there is a small amount of decrease in the income inequalities among regions from 0.1248 in 1990 to 0.1201 in 2000. For this reason, in the following part of the study, this decrease tendency will be comprehensively examined in point of leading to regional convergence or divergence tendencies.

4 The Convergence of Regional per capita Incomes among NUTS Regions in Turkey

4.1. Methodology

One of the key predictions of the neoclassical growth model is that spatial disparities in per capita income, which is a key indicator of social and economic welfare, should converge over the long run. This will occur because of the opposite relations between wage and labor. It is also important to distinguish between two different

Table 2 The Scope of Regional Development Projects

Indicators	Unit	GAP	ZBK	DAP	DOKAP	Turkey
Starting Year of Project	-	1980	1995	1996	1999	-
Ending Year of Project	-	(ongoing)	1997	2000	(ongoing)	-
Area	km ²	75,561	9,493	158,972	39,361	779,452
Population in 1997	Per head	6,128,973	1,027,208	5,868,535	2,911,108	62,865,574
Population Density in 1997	Per head/km ²	81	108	37	74	81
Population Growth Rate (1990-97)	Per thousand	24.2	-10.3	6.9	-2.4	15.1
Urbanization Rate	Per cent	64.1	43.3	53.5	48.6	65.0
GDP per head (1998) (1)	Thousand TL	990	1,838	674	1,103	1,830
GDP per head (1998) (1)	Index value	54.1	100.5	36.9	60.3	100.0
GRP (2) / GDP (1998) (1)	Per cent	5.3	1.6	3.4	2.8	-

Source: SPO (2000) : Long-Term Strategy and Eight Five-Year Development Plan.

Note: (1) At 1987 prices (2) GRP: Gross Regional Product

Table 3 Percentage Share of Regions in GDP per capita

Code	NUTS (level-1) Regions	1987	1995	2001
TR1	Istanbul	0.16	0.14	0.13
TR2	Western Marmara	0.10	0.11	0.11
TR3	Aegean	0.12	0.12	0.11
TR4	Eastern Marmara	0.13	0.14	0.14
TR5	Western Anatolia	0.10	0.11	0.10
TR6	Mediterranean	0.09	0.08	0.08
TR7	Central Anatolia	0.06	0.06	0.06
TR8	Western Black Sea	0.06	0.06	0.07
TR9	Eastern Black Sea	0.06	0.07	0.06
TRA	North Eastern Anatolia	0.03	0.03	0.03
TRB	Central Eastern Anatolia	0.04	0.04	0.03
TRC	South Eastern Anatolia	0.05	0.05	0.05
Total percentage		100	100	100

Source: SPO (1999) for 1987 and SPO (2003c) for 1995 and 2001 years.

types of convergence, namely sigma-convergence (or σ -convergence) and beta-convergence (or β -convergence)¹⁾.

In this study, as the convergence approach, the growth rates of standard deviations have been tested and the distribution of values in the standard deviations has

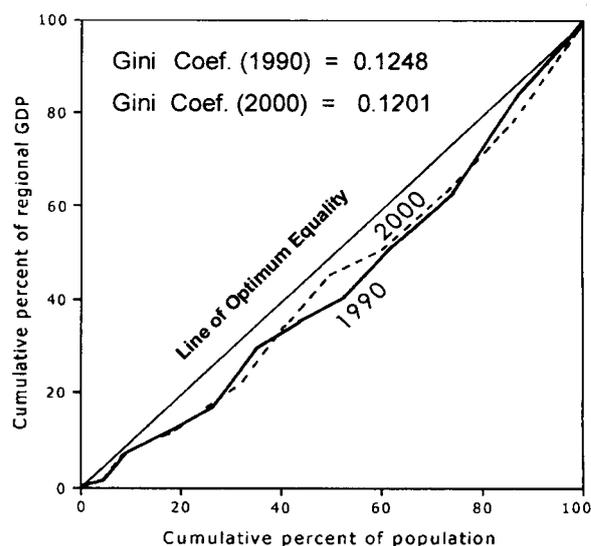


Fig. 3 The Relation between Regional GDP and Population in Turkey

Calculated from the data of SPO (2003a) and SPO (2003b).

been interpreted by using either the time series and/or the cross section data. A significant and negative relations (or decreasing tendency) in coefficients for the initial income levels will be commented as the evidence of convergence with verifying the prediction of the neoclassical growth model (Berber, Yamak, and Artan,

2000). In this study, the data of regional per capita incomes were modified as the cross-section form²⁾ and the graph of standard deviations was drawn in logarithmic series³⁾ for testing σ -convergence by using the annual data among 1987-2001 years.

4.2. Data

In this section, for the data analysis, it is divided two groups, in which each group has six regions in terms of their development levels. As starting value from 13 to 15, it is clearly seen that the difference is very high between Figures 4 and 5. The income distribution among developed regions is very close to each others and shows extremely a stable growth (Figure 4). However, contrary to Table 3, underdeveloped regions show very fluctuating values and an unstable growth, for instance, Western Black Sea Region is the first region in the ranking among 1987-1991, but after 1991 it is the third region in the ranking for four years and after 1995 it becomes first region again till 2001. This finding also simply showed us there is a remarkable unbalanced development

tendency among the regions.

4.3. Results

Applying sigma-convergence model (Figure 6) for regional per capita income data⁴⁾, the distribution of standard deviation was seen that it did not decline as expected in the literature for NUTS level-1 regions. As an optimistic point of the results, the trend of standard deviation has a tendency to slow down among 1991-1996 and to decrease after 1997 with value of 0.705 R^2 , which means the income correlation among regions in Turkey is statistically significant at 95% confidence level.

5 Conclusion

Within the framework of the principles of integrity with the EU and global standards, it has been observed that Turkey has spent great effort to solve the disparities among the regions but it is still far from expectations, which means the multidimensional and multiregional

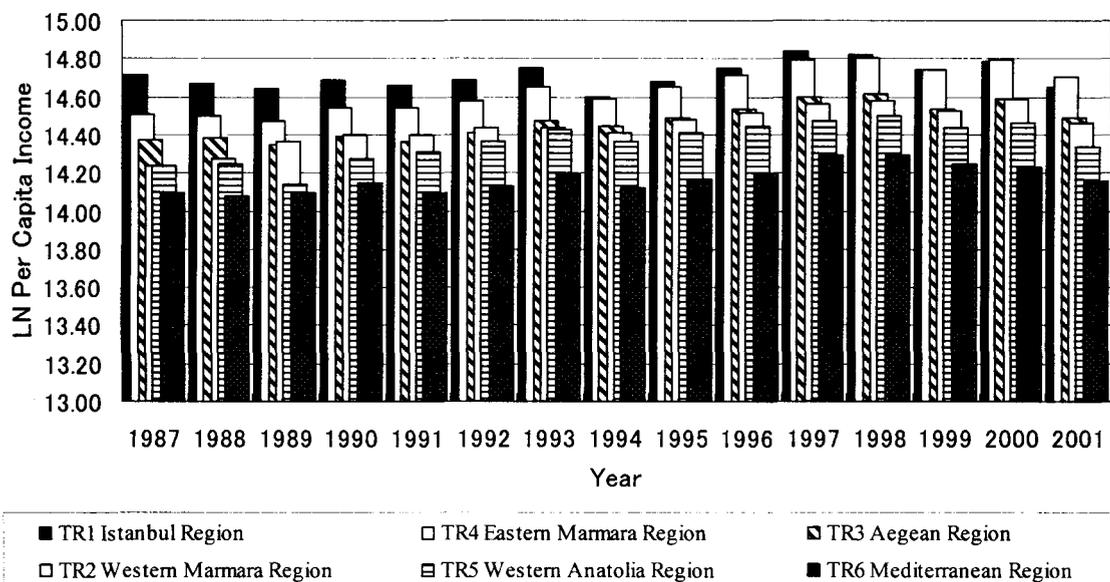


Fig. 4 LN Regional per capita Distributions in Istanbul, Western Marmara, Aegean, Eastern Marmara, Western Anatolia, and Mediterranean Regions

Source: SPO (1999) for 1987-1989 and SPO (2003c) for 1990-2001 periods.

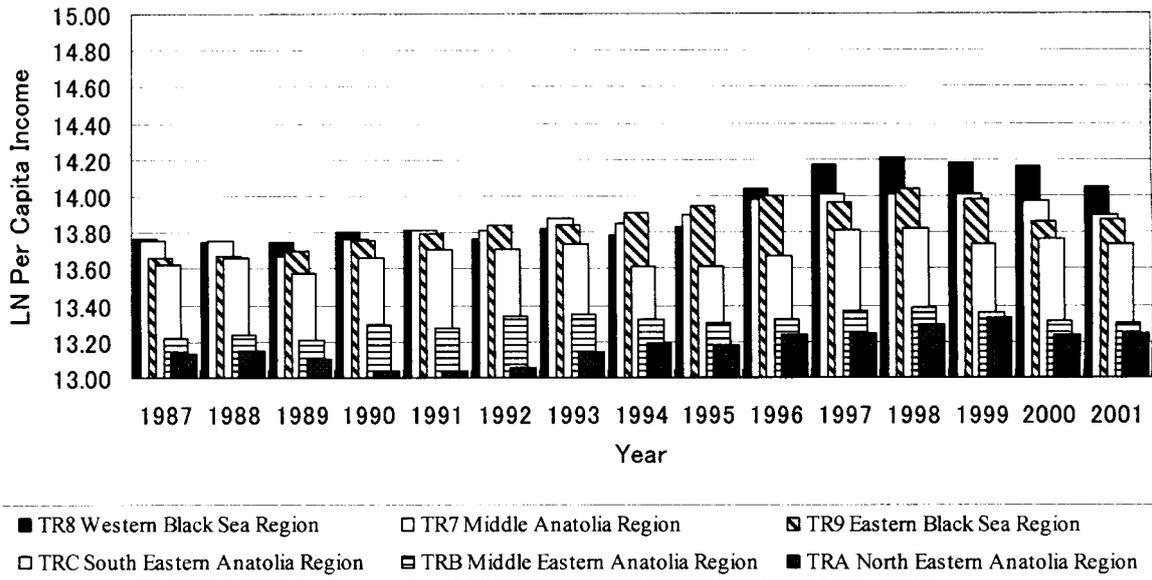


Fig. 5 LN Regional per capita Distributions in Middle Anatolia, Western Black Sea, Eastern Black Sea, North Eastern Anatolia, Middle Eastern Anatolia, and South Eastern Anatolia Regions

Source: SPO (1999) for 1987-1989 and SPO (2003c) for 1990-2001 periods.

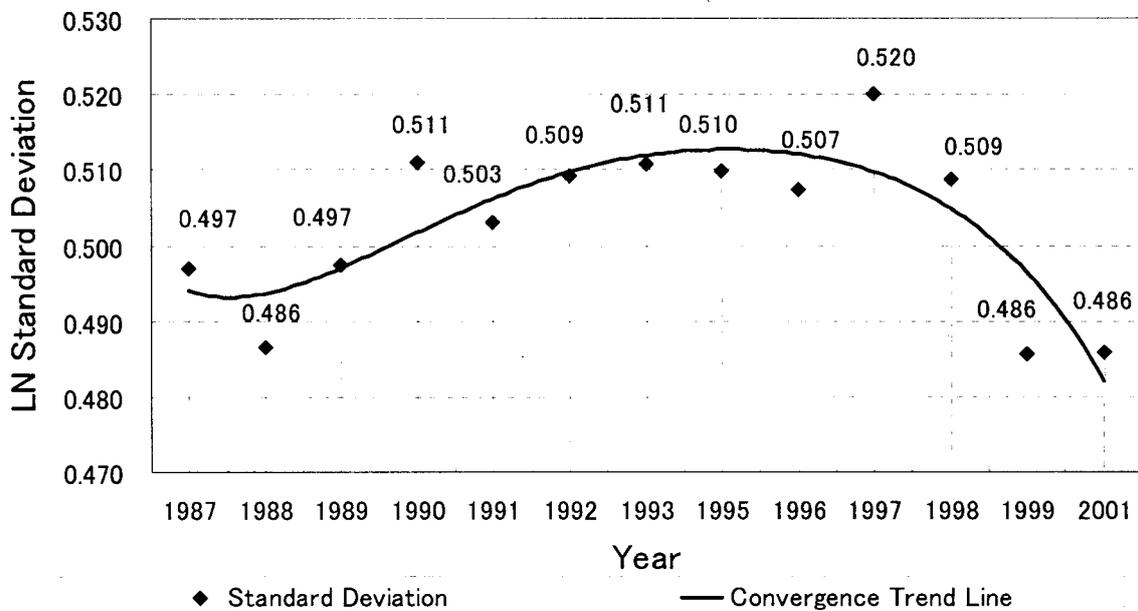


Fig. 6 Sigma-Convergence in GDP per capita among NUTS level-1 Regions

Note: All numbers in the Figure show the data calculations of Figs. 4 and 5.

projects have not been operated efficiently. For that reason, national or international regionalization efforts should be built not only on the geographic conditions of

region but also on the socio-economic condition of region, when we need to balance the inequalities among regions.

Finally, developmental issues have many imperative and dynamic processes which are closely linked with well-organized management plans and determined policy implementations to receive maximum benefits from the socio-economic structure of regions. Therefore, Turkey needs to implement consistent regional policies to reduce the large inequalities among the regions and to reach the convergence targets by increasing the amount of public and private investments, particularly in the relatively less developed regions by using local forces more effectively.

Foot Notes

- 1) These two types of convergence are defined as follows;

σ -convergence is a more conventional measure of income inequality and is simply a measure of the dispersion of per capita income between regions at a given point in time. Convergence occurs in this case when the dispersion of per capita income between regions falls over time.

β -convergence occurs when poor regions grow faster than rich regions. This implies a negative relationship between the growth of per capita income (over several decades) and the level of per capita income at starting of the period (Armstrong and Taylor, 2001).
- 2) The cross-sectional data describes the activities or behavior of individual persons, firms, or other units at a given point in time. And also, the cross-sectional econometric models provide information on the behavior of a variable due to external factors.
- 3) The logarithm function is a bijection (a mathematical function that is a one-to-one) from the set of positive real numbers to the set of all real numbers.
- 4) In the data of the convergence analysis, two years (1994 and 2000) were ignored to reach more reasonable results because of the crisis and fluctuations in the economy.

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References

- Aktan, C. C. (1998): Globalization, Regionalization, and Localization. *Globallesme, Bolgesellesme ve Yerellesme. Dış Ticaret Dergisi. Journal of Foreign Trade*, **10**, pp.2-3.
- Armstrong, H. and Taylor, J. (2001): *Regional Economics and Policy. Third Edition, USA*, pp.64-89.
- Azzoni, C.R. (2001): Economic Growth and Regional Income Inequality in Brazil. *Annals of Regional Science*, **35**, pp.133-152.
- Barro, R.J. and X. Sala-i-Martin (1991): Convergence across States and Regions. *Brooking Paperson Economic Activity*, **1**, pp.107-158.
- Barro, R.J. and X. Sala-i-Martin (1992): Convergence. *Journal of Political Economy*, **100**, pp. 223-251.
- Berber, M., Yamak R., and Artan, S. (2000): An Empirical Study on Validity of Interregional Convergence Hypotheses in Turkey. *Türkiye'de Yakınlaşma Hipotezinin Bölgelerarası Geçerliliği Üzerine Ampirik Bir Çalışma, 1975-1997*, 9. Ulusal Bölge Bilimi ve Bölge Planlama Kongresi Bildiriler Kitabı, ss. 51-59, Ekim 2000, Trabzon, pp. 2-6.
- Bernard, A. B. and Duralf, S. N. (1995): Convergence in International Output. *Applied Econometrics*, **10**, pp. 97-108.
- Erk, N., Ates, S., and Direkci, T. (2000): Convergence and Growth within GAP Region (South Eastern Anatolia Project) and Overall Turkey's Regions, Working Paper conferred in International METU Conference in Economics IV, September, 13-16,

- 2000 Ankara-Turkey, pp.1-3.
- Genli Yigiter, R. and Yirmibesoglu, F. (2003): ERSA 2003 CONGRESS, Local Agenda 21 and Practices in Turkey. Istanbul Technical University, Faculty of Architecture Department of Urban and Regional Planning, pp.8-10.
- Gezici, F. and Hewings, G. (2001): Regional Convergence and the Economic Performance of Peripheral Areas in Turkey. *Review of Urban & Regional Development Studies*, **16**, pp.2-5.
- Lall, S. and Yilmaz, S. (2001): Regional Economic Convergence: Do policy instruments make difference? *Annals of Regional Science*, **35**, pp.153-166.
- Lopez-Bazo, E., Vaya, E., Mora, A., and Surinach, J. (1999): Regional Economic Dynamics and Convergence in the EU. *The Annals of Regional Science*, **33**, pp.343-370.
- Quah, D. (1997): Empirics for Growth and Distribution: Stratification, Polarization and Convergence Clubs. *Journal of Economic Growth*, **2**, pp.27-59.
- Rey, S. and Montouri, B. (1999): US Regional Income Convergence: a spatial econometric perspective. *Regional Studies Association*, **33**, pp.146-156.
- Saray, R. and Cashin, P. (1996): Regional Economic Growth and Convergence in India. *Finance & Development*, **33**, pp. 49-52.
- Sarica, I. (2001): Regional Development Policies and Projects in Turkey, Turkiye'de Bolgesel Gelisme Politikalari ve Projeleri. *Akdeniz İ.İ.B.F. Dergisi*, **1**, pp. 154-161.
- Siriopoulos, C. and Asteriou, D. (1998): Testing for Convergence across the Greek Regions. *Regional Studies*, **32**, pp. 537-546.
- SPO (1999): İller ve Bölgeler İtibariyle Çeşitli Göstergeler, 1999 (Various Indicators According to the Regions and Provinces), *in Turkish*. <http://www.dpt.gov.tr/bgyu/>
- SPO (2000): Long-Term Strategy and Eight Five-Year Development Plan.
- SPO (2003a): Economic Gelismeler (Economic Developments), *in Turkish*. <http://www.dpt.gov.tr/bgyu/>
- SPO (2003b): Demografik Gelişmeler (Demographic Developments), *in Turkish*. <http://www.dpt.gov.tr/bgyu/>
- SPO (2003c): Kişi Başı GSYİH 1987 Yılı Fiyatlarıyla (GDP per capita in 1987 fixed prices), *in Turkish*. <http://www.dpt.gov.tr/bgyu/>
- SPO (2004a): Coğrafi Bölgeler İtibariyle İllerin Dağılımı (Distributions of Provinces according to the Geographic Regions), *in Turkish*. <http://www.dpt.gov.tr/bgyu/>
- SPO (2004b): İstatistiki Bölge Birimleri Sınıflandırması İtibariyle İllerin Dağılımı (Distributions of Provinces according to the NUTS Regions), *in Turkish*. <http://www.dpt.gov.tr/bgyu/>