Pay Inequality in the Turkish Manufacturing Sector by Statistical Regions: 1980-2001[1]

Adem Yavuz Elveren, Ph.D.
Kahramanmaras Sutcu Imam University
Department of Economics

ademyavuzelveren@gmail.com

University of Texas Inequality Project Working Paper No. 59

March 4, 2010

Abstract: This paper analyses pay inequality in the Turkish manufacturing sector annually from 1980 to 2001. Using the between-group component of Theil's T statistic, the paper provides more information on pay inequality. It decomposes the evolution of inequality by statistical regions -The Nomenclature of Territorial Units for Statistics - (i.e. NUTS-1 and NUTS-2). The decompositions show that inequality increases in the late 1980s in the private sector both between regions of NUTS-1 and NUTS-2.

JEL Classification: C32, D39, D63, J31

Keywords: Turkey, Inequality, NUTS, Sectors

[1] We would like to thank Ahmet Karakoç and Ferhat İspiroğlu for their help.

1. Introduction

This paper analyzes pay inequality in the manufacturing sector of Turkey between 1980 and 2001. The Turkish economy can be associated with a persistently unequal income distribution. With the adoption of the neo-liberal model in 1980, inequality rose substantially, particularly in the 1990s (Elveren and Galbraith 2009). The main causes for this deterioration are the negative trend of real wages, a change in tax policies benefiting the rich, a failure of redistributive tax policy, high real interest rates (World Bank, 2000), unequal education (Köse and Güven, 2007; Duygan and Guner, 2006), and excessive migration to urban areas due both to economic and political pressure.

Following up the work of Elveren and Galbraith (2009), the paper aims to provide more information by considering the Nomenclature of Territorial Units for Statistics (NUTS) regions of Turkey. This paper contributes to the study of economic inequality in Turkey by providing a detailed decomposition of the evolution of pay inequality in the manufacturing sector by NUTS-1 and NUTS-2 regions

In the next section we briefly review the literature on spatial disparities in Turkey. In section three the methodology and data are presented. Our analysis is provided in section four. Finally, we summarize our findings in the conclusion.

2. Spatial Disparities in Turkey: A Brief Review

In general, the distribution of income has worsened worldwide in the neo-liberal era[2]. The neoliberal paradigm led a general rise in inequality due largely to the increasing share of income flowing through the financial sector, and the increasing concentration of income in the leading city or cities as opposed to outlying regions or the countryside.

[2] The exceptions were notably China, India, and Iran, who were insulated from the global financial system. A general exception to sharply rising inequality during the whole period occurred in Scandinavia, where Denmark, notably, observed a substantial reduction in inequality from the 1970s through the 1990s (Galbraith 2007).

Having adopted the neoliberal model in 1980 Turkey has experienced a similar deterioration of its income distribution. Although it is a fact that the data coverage is extremely sparse and data sources are not strictly comparable to each other, it can be stated that while inequality declined through the 1970s, it increased in the 1980s, and particularly from 1987 to 1994. Also, some studies show that while real wages in the Turkish manufacturing sector increased in the 1970s, there was a trend of decline in the export-led regime era in post-1980 (Erdil, 1996; Voyvoda and Yeldan, 2001; Memis 2008). However, some show that -- as do we in the Appendix (see Figure 17) -- there is convergence in terms of per capita income by provinces. However, it is a high variation in population, rather than converging incomes *per se*, that created this convergence in income per capita (Kılıçaslan and Özatağan 2007).

Persistent income inequality between urban and rural and geographical regions of Turkey has been studied extensively. The main findings of this literature[3] yield some not-unexpected facts about income inequality in Turkey, such as that income inequality is greater in urban areas than rural areas, increasing inequality between coastal and interior provinces, a true dichotomy between the wealthier West and the poorer East, and no convergence between regions and between provinces (Temel et. al. 1999, Şenesen, 2003; Doğruel and Doğruel, 2003; Gezici and Hewings, 2004; Karaca, 2004; Aldan and Gaygisiz, 2006; Kirdar and Saracoglu, 2006; Elveren and Galbraith, 2009; Celebioglu and Dall'erba, 2009).

The findings of the present paper are relevant for two main reasons. First, it is a fact that wages are a major component of income, and that measures of pay inequality are, in most cases, broadly consistent with survey-based income inequality measures. Indeed, Galbraith and Kum (2005) show that pay inequality in manufacturing sector is a highly significant determinant of the widely-used Deininger and Squire inequality measure, after controlling for survey type and for the share of manufacturing employment in population. So, in this sense, this study skecthes a general picture of income inequality in Turkey.

[3] See Elveren and Galbraith (2009) for a detailed literature review.

Second, it measures the inequality with respect to new regional definition, namely the Nomenclature of Territorial Units for Statistics (NUTS). The European Union (EU) considers reducing spatial disparities as the essential part of the integration and cohesion process. It is a fact that the EU has large intraregional and particularly international socio-economic disparities. Inequality between affluent Western Europe and the relatively less developed eastern countries is the most obvious one of these. Therefore, the EU established NUTS in order to provide a single uniform breakdown of territorial units for the production of regional statistics. The NUTS classification has been used in Community legislation since 1988 and a Regulation of the European Parliament and of the Council on the NUTS was adopted in 2003. This classification facilitates the determination of disadvantaged or less developed areas to direct development objectives and funds of the EU.

The globalization process has pushed EU regions into fierce competition. Since the national barriers have been lowered, regional policies have become more and more important. In this respect, Turkey in the neoliberal era, particularly in the accession process with the EU, has given importance to regional development strategies. Indeed, the first acknowledgement of and attempt to reduce interregional disparities was in the 3rd Development Plan (1973-1977), which defined "Priority Regions for Development (PRD)." Today, 49 provinces, most of them located in the Black Sea, East and Southeastern Anatolia regions, are covered by this implementation[4]. In line with the EU Acquis, Turkey has classified her regions according to NUTS-1 (i.e. 12 regions), NUTS-2 (26 regions) and NUTS-3, which covers the current 81 provinces. The importance of this classification lies in the idea of reaching a higher regional and national development level, through the development agencies established in Level 2 regions. The NUTS classification is an

[4] However, it has been shown that the PRD implementation was not successful in reducing regional disparities (Öğüt and Barbaros 2003; Aldan and Gaygisiz 2006; Gezici and Hewings 2004; Sari and Guven 2007; Güven 2007). The mains causes for failure are the inclusion of too many provinces, frequent policy changes, and a tendency to treat all PRD provinces similarly, ignoring their different development levels and non-coordinated investments.

improvement when compared with some other regional classifications, in that it coincides at the finest level with provinces, which have similiar socio-economic backgrounds.

Therefore, by taking advantage of this statistical categorization, we believe that this paper can add some valuable information to previous knowledge of the evolution of inequality in Turkey[5].

3. Methodology and Data

This study follows methods developed in papers on Argentina (Galbraith et al. 2007), Brazil (Calmon et al. 2000), Chile (Spagnolo et al. 2008), Colombia (Spagnolo and Munevar 2008), Costa Rica (Obando 2006), Mexico (Adair 2006), and Taiwan (Wang 2007). All use the between-groups component of Theil's T statistic on regional and sectoral data sets to map the evolution of inequality through time, and the geographic and sectoral dispersion of winners and losers.

We use the same method to analyze the overall evolution of pay inequality in the manufacturing sector as well as the contributions to inequality of each manufacturing sub-sector and the statistical regions of Turkey.

Theil's T statistic has two components, the between-group (T^B), and the within-group component (T^W).

$$T = T^B + T^W \qquad [1]$$

Since we have aggregated data, the within-group component of inequality is unobserved; the between group-component, on the other hand, provides the lower-bound estimate of general pay inequality in this case (Theil, 1972). T^B can be stated as

[5] Öztürk (2005) and Gezici (2006) use the data of GDP per provinces to analyze income inequality by the NUTS regions. Also see Filiztekin (2008) for a comprehensive study on regional disparities in Turkey.

$$T^B = \sum_{i=1}^{n} \left\{ \left(\frac{p_i}{P} \right) * \left(\frac{y_i}{\mu} \right) * \ln \left(\frac{y_i}{\mu} \right) \right\} \qquad [2]$$

where i indexes groups, p_i is the population of group i, P is the total population, y_i is the average wage in group i, and μ is the average wage of the entire population.

This measure provides a robust indicator of the trend of overall inequality and demonstrates the evolution of the contribution to inequality of various groups for whom data on average income and population weights are available.

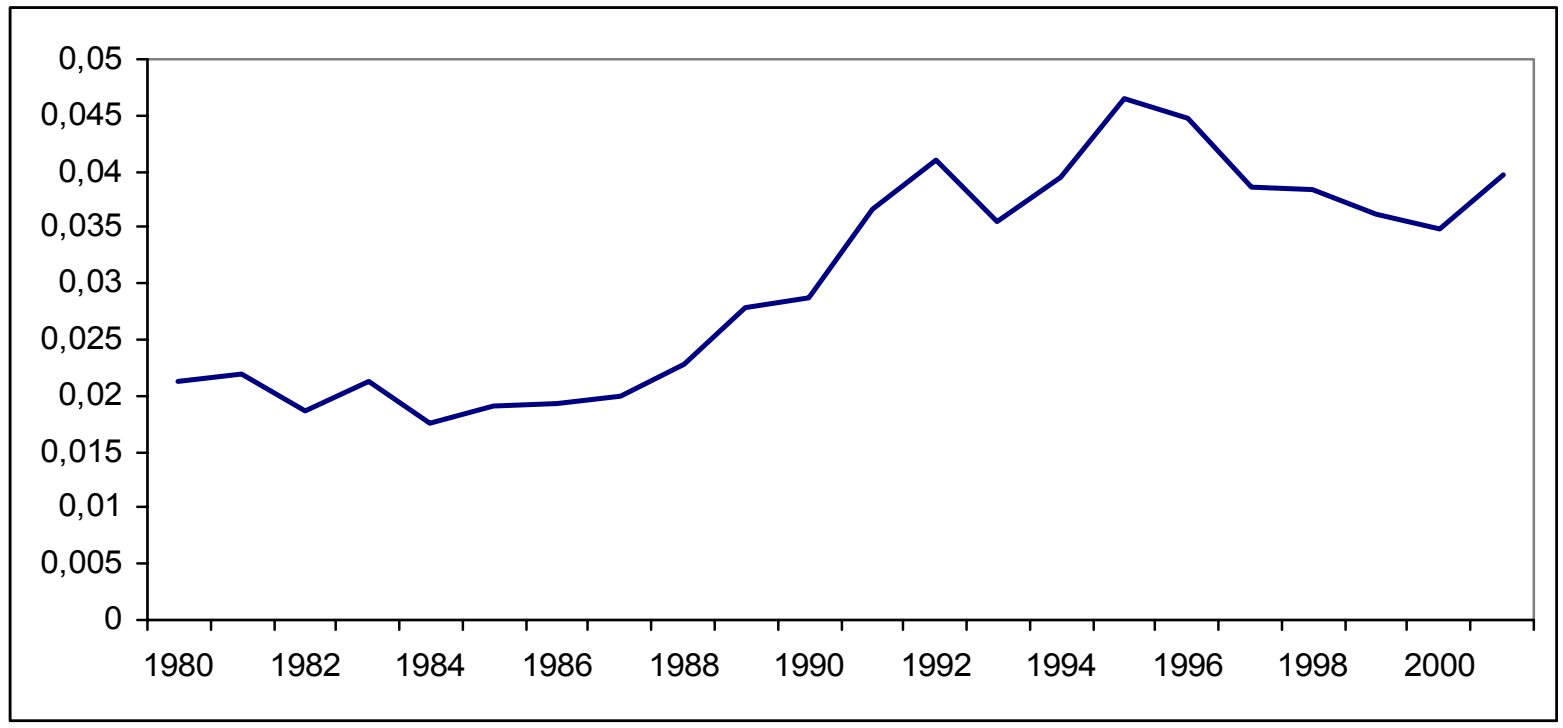
We use the Annual Manufacturing Industry Statistics (AMIS) for all available years provided by the Turkish Statistical Institute. The data is provided at a two-digit level and is disaggregated according to provinces. It covers establishments that have more than 10 employees. We calculated the data based on 12 regions of NUTS-1 and 26 regions of NUTS-2 (see the Appendix for regions and provinces for the NUTS classification).

We made all calculations separately for the private sector and the public sector.

4. Pay Inequality in the Manufacturing Sector

The general trend of pay inequality by NUTS-2 regions for the private sector in the manufacturing is presented in Figure 1. The figure shows stability until the late 1980s and after that a rapid increase in pay inequality. A similiar trend is observed in NUTS-1 regions as well (see Figure 11 in the Appendix, as well as Figure 12 and Figure 13 for the quite different results, as expected, for public sector by NUTS-1 and NUTS-2, respectively).

Figure 1: Pay Inequality in the Turkish Manufacturing Sector: 1980 -2001 (NUTS-2)



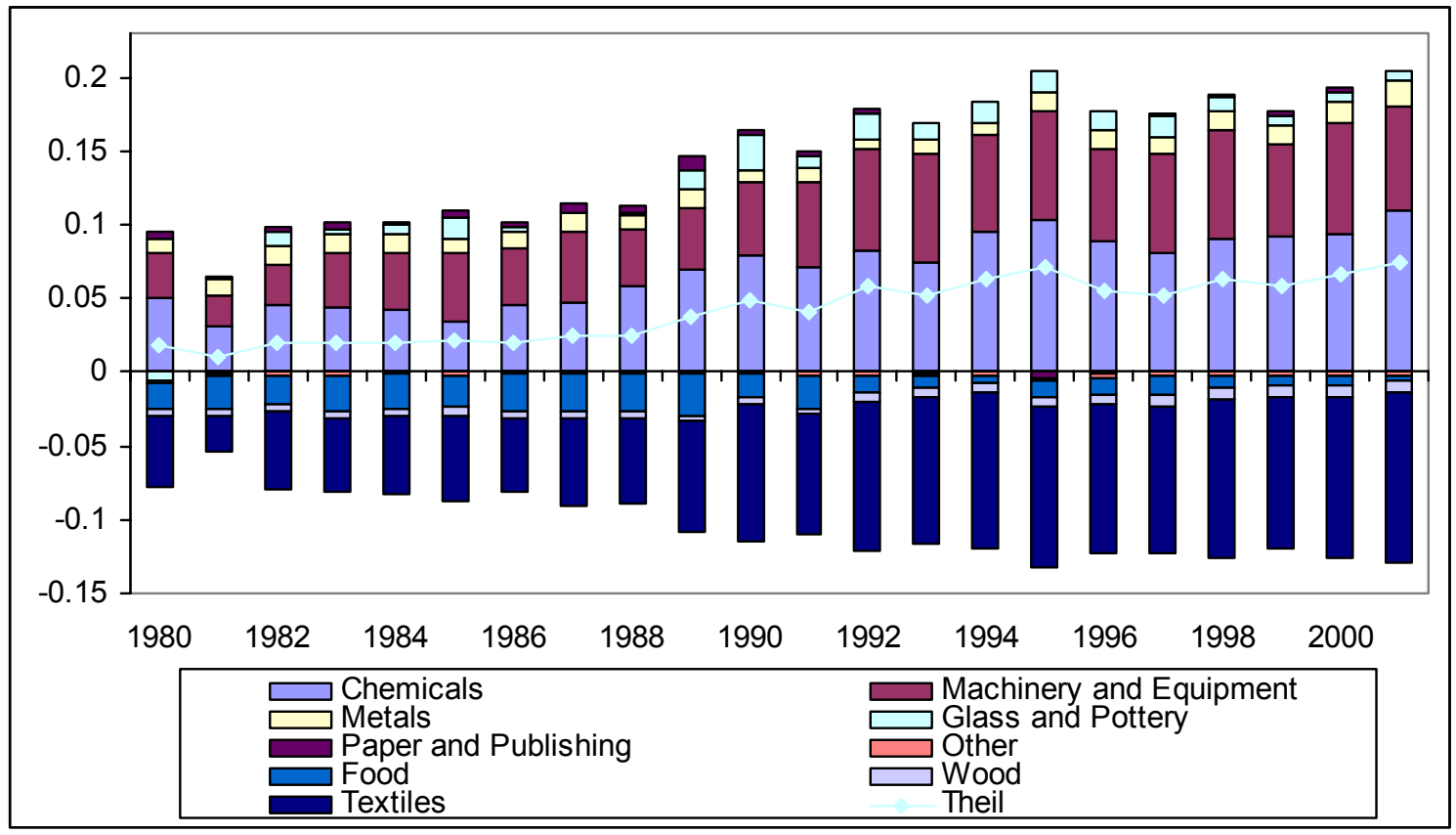
Source: Author's Calculation

4.1 Pay Inequality by Sectors

Figure 2 shows a detailed decomposition. Sectors whose pay rates exceed the average pay appear above the zero line, and the size of the bars show the relative contribution to inequality of each sector. In the same manner, the sectors that are located below the x-axis have a lower average wage than the mean wage.

Five sectors with above-average pay have made contributions to inequality: *chemicals, machinery and equipment, glass and pottery, metals,* and *paper*. The sectors of *wood, food,* and particularly *textilesI,* on the other hand, suffer from lower wages compared with the manufacturing sector in general.

Figure 2: Pay Inequality by Manufacturing Sectors (Private Sector)



Source: Elveren and Galbraith (2009)

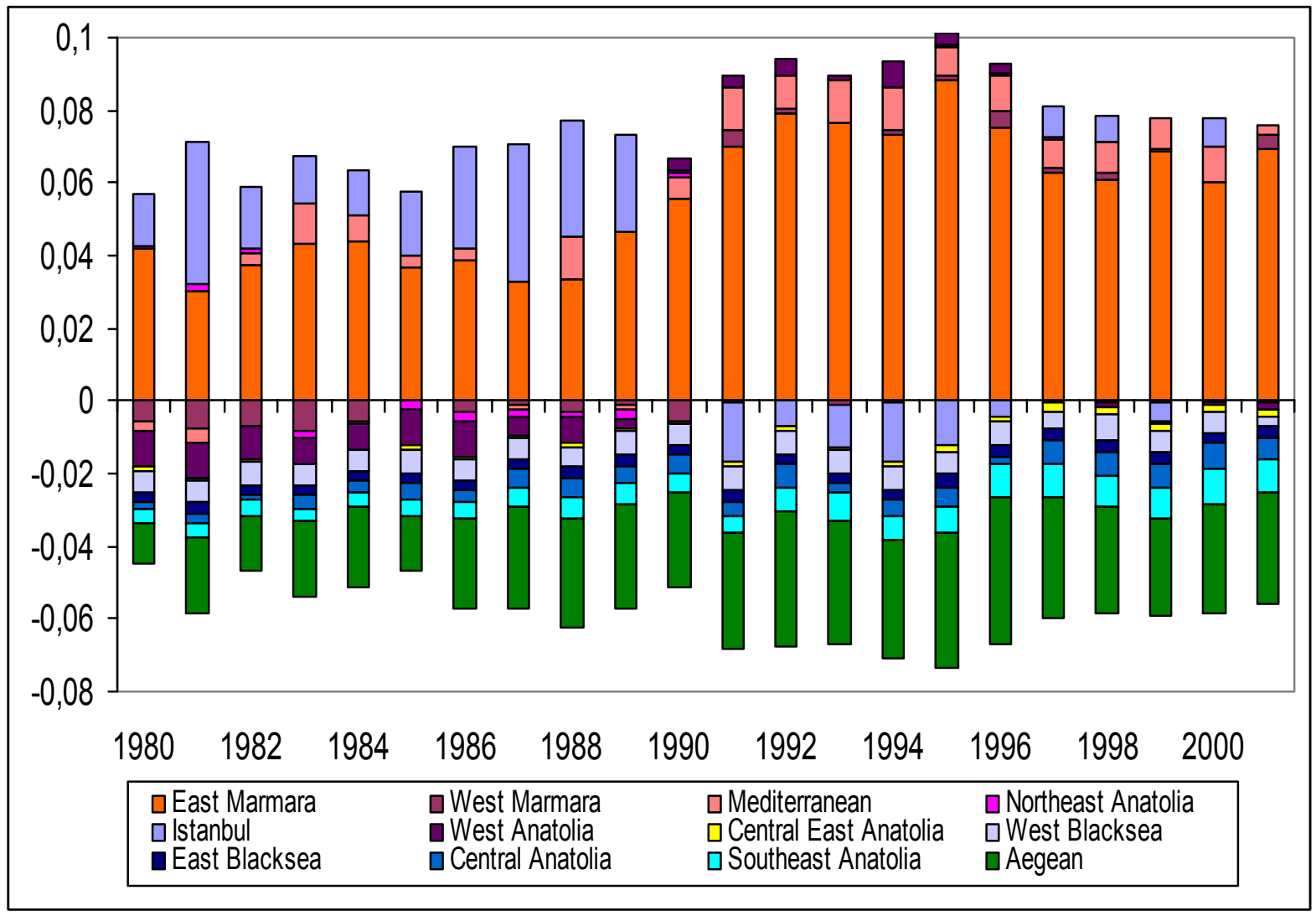
However, it is important to decompose changes in inequality. Changes in overall inequaliity may be caused by changes in wages and/or in the employment level. The line in this diagram represents the overall Theil's T statistic and is the sum of the positive and negative elements shown in the graph. Thus an increasing negative contribution of the textile sector, for example, can be caused either by a decline in wage level and/or an increase in the size of the sector. Considering the fact that the textile sector is one of the major export sectors in the Turkish economy, it is important to see how much of this inequality is caused due to the wages that has been pushed down, in relative terms, in the neoliberal period.

4.2 Pay Inequality by NUTS-1

Figure 3 shows pay inequality in the private sector across 12 regions of NUTS-1. The largest contributions to inequality are made the East Marmara region, which has above mean wage levels, and the Aegean region, which has lower wages than average. Figure 4 shows the results for the public sector. Accordingly, for the public sector while the regions of the West

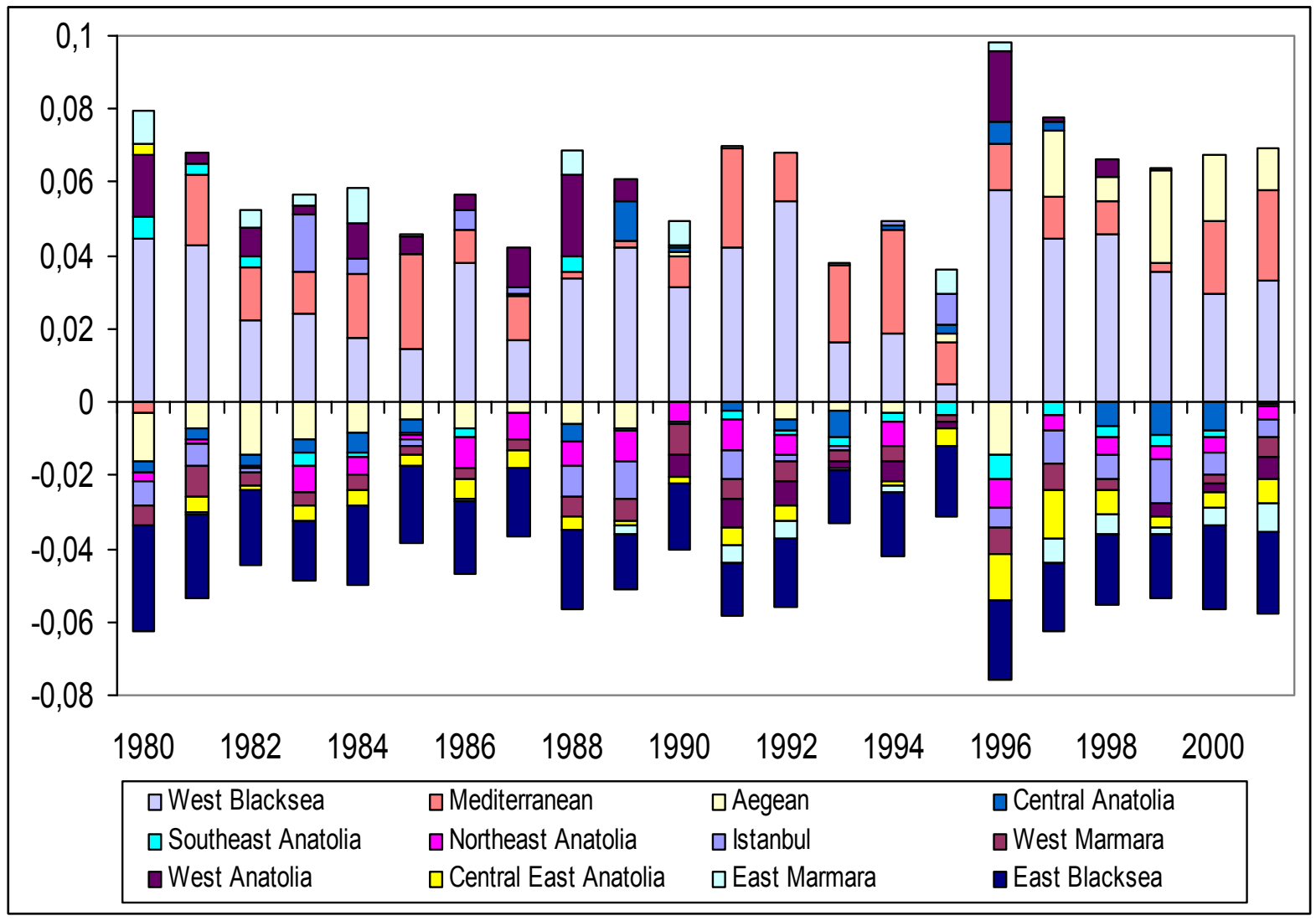
Black Sea, the Mediterranean and the Aegean are the winners, others, particularly the East Black Sea, suffer from below-mean wage levels.

Figure 3: Pay Inequality by NUTS-1 (Private Sector)



Source: Author's Calculation

Figure 4: Pay Inequality by NUTS-1 (Public Sector)



Source: Author's Calculation

Figure 5 and 6 show the values of Theil Index on a map, where the numbers refer the NUTS-1 regions as following 1- West Marmara, 2- Istanbul, 3- East Marmara, 4- West Black Sea, 5- East Black Sea, 6- Aegean, 7- Central Anatolia, 8- Central East Anatolia, 9- Northeast Anatolia, 10- West Anatolia, 11- Mediterranean, and 12- Southeast Anatolia.

Figure 5: Theil Index for NUTS-1 (Private Sector-1980)

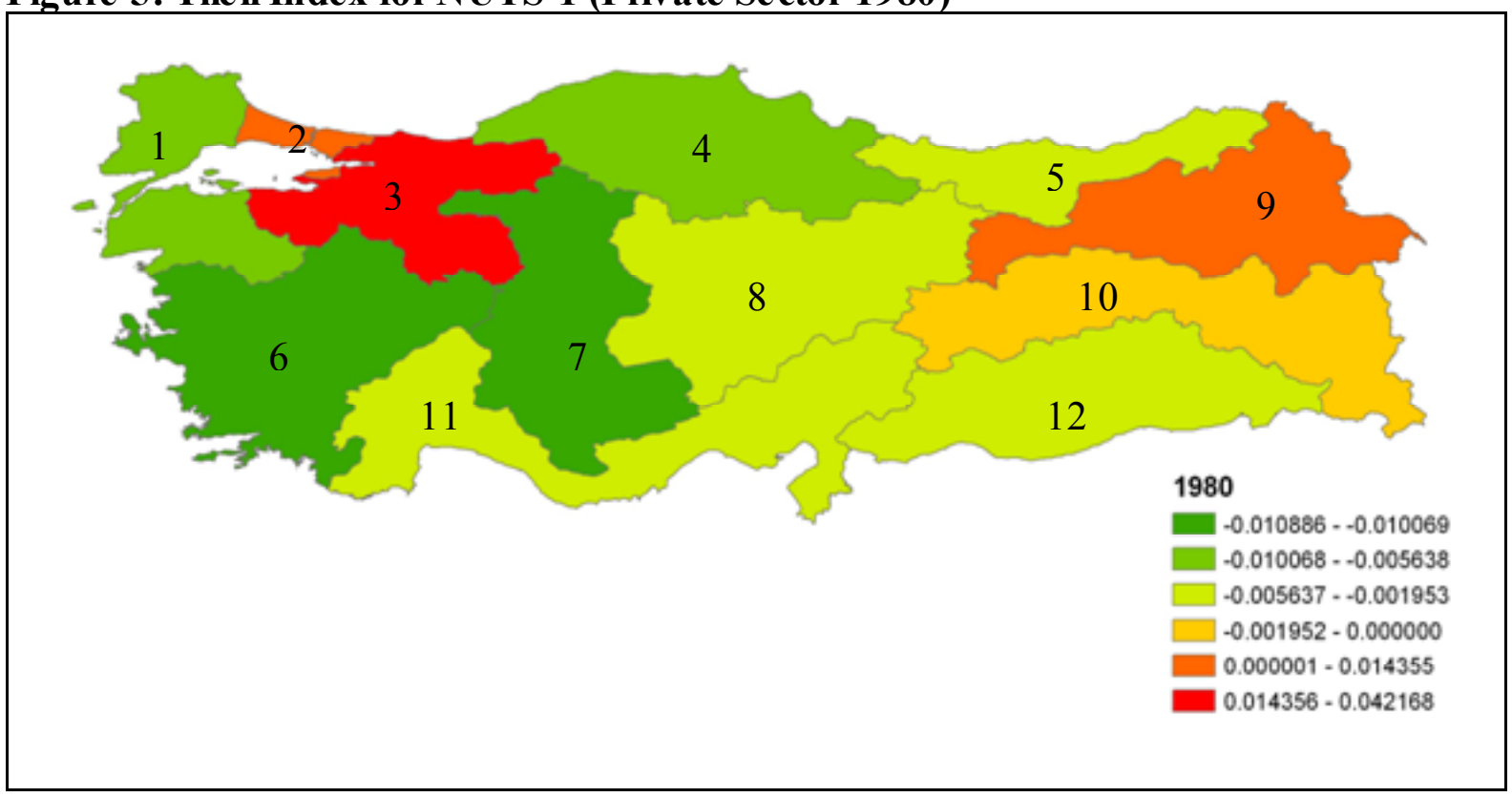
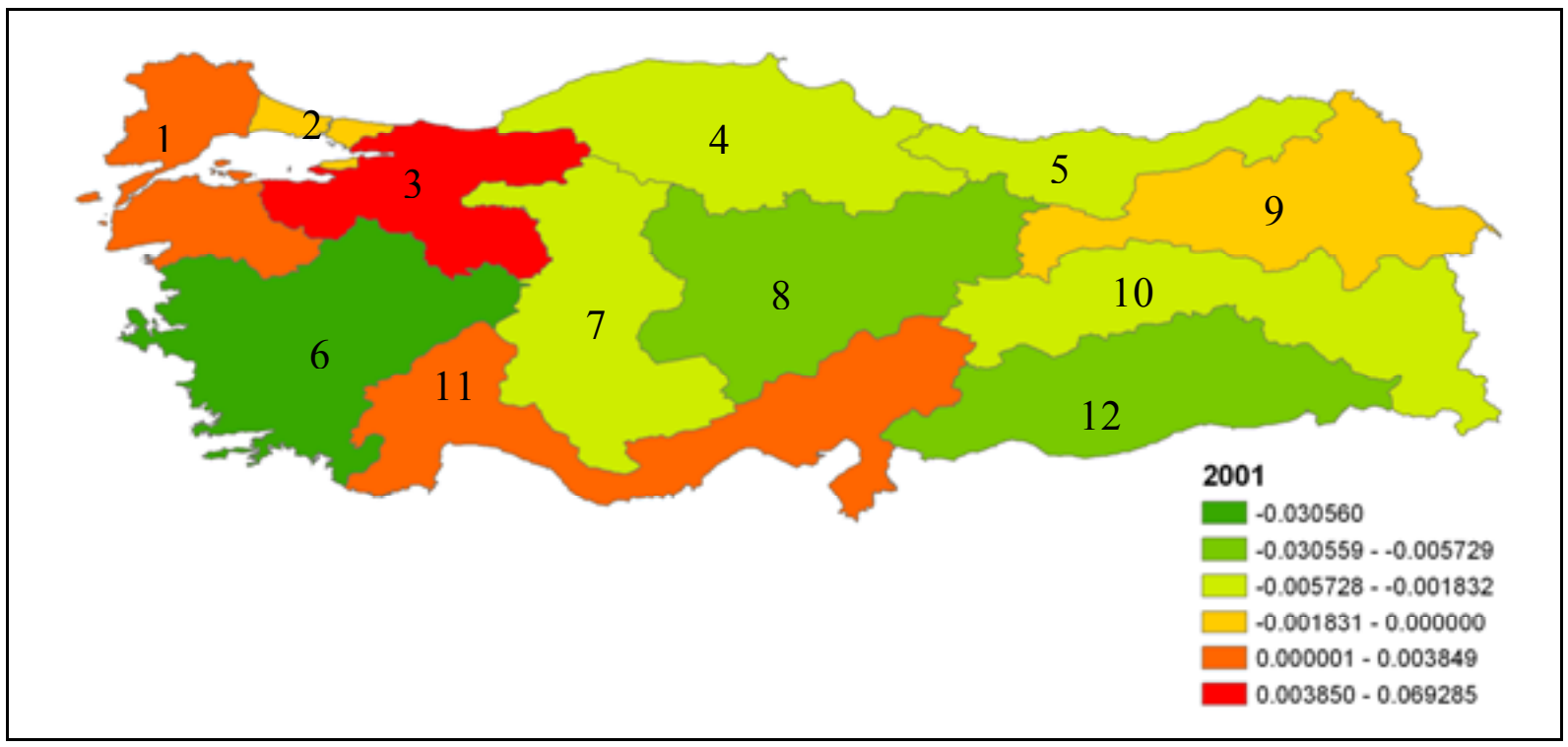


Figure 6: Theil Index for NUTS-1 (Private Sector-2001)



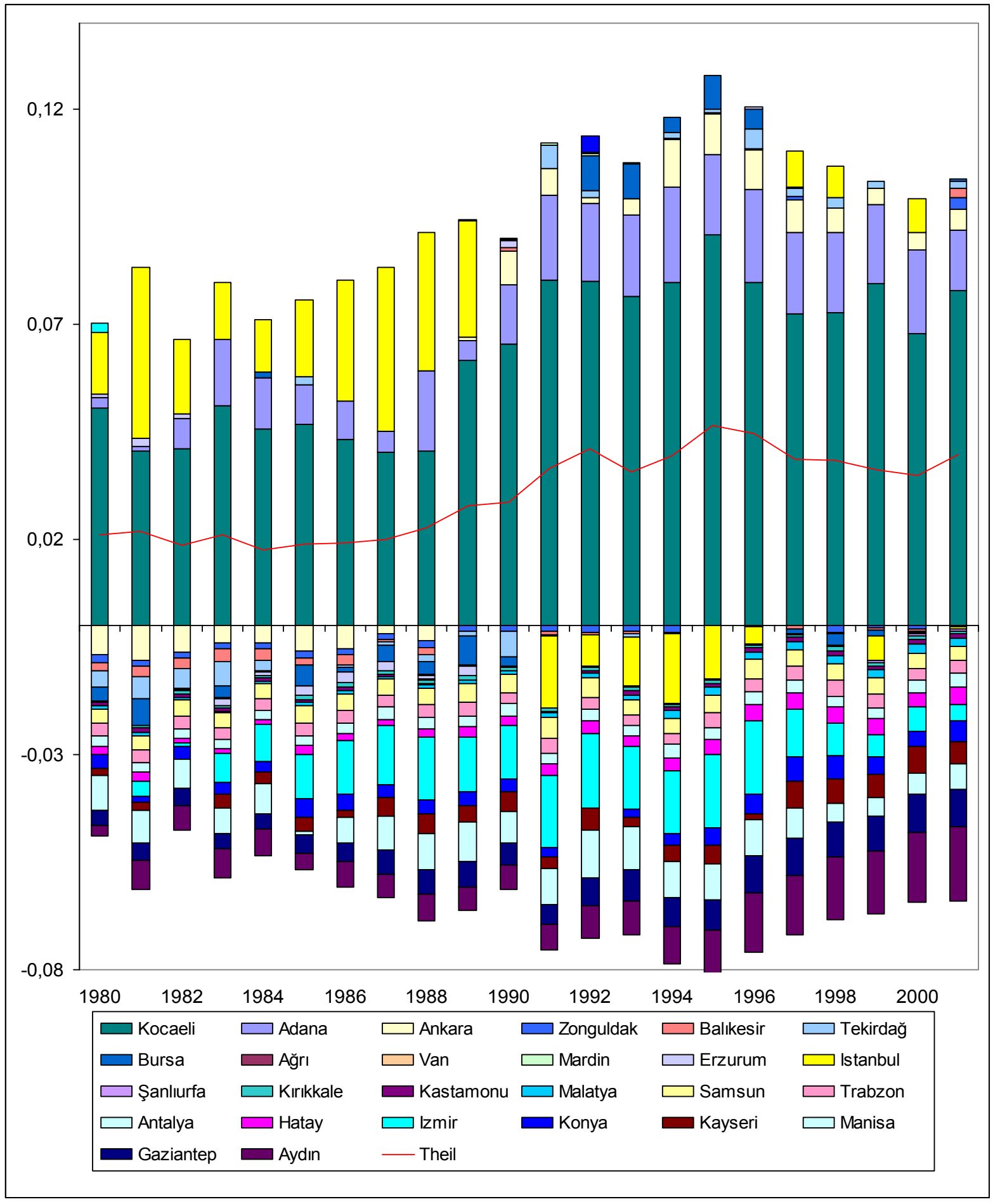
4.3. Pay Inequality by NUTS-2

Figure 7 and Figure 8 show pay inequality across 26 regions of NUTS-2 for the private sector and the public sector, respectively[6]. Accordingly, for the private sector, while

[6] NUTS-3 covers current 81 provinces. Elveren and Galbraith (2009) provide pay inequality across 67 provinces in Turkey. They recalculated the data of 81 provinces based on 67 provinces in order to prevent an arbitrary increase in the Theil's T statistic due to an increase in the number of provinces throughout the period. Therefore,

Kocaeli, Adana, Ankara and Zonguldak are the winners Aydın, Gaziantep, Manisa, Kayseri, Konya and Izmir are major regions, whose pay is below the average.

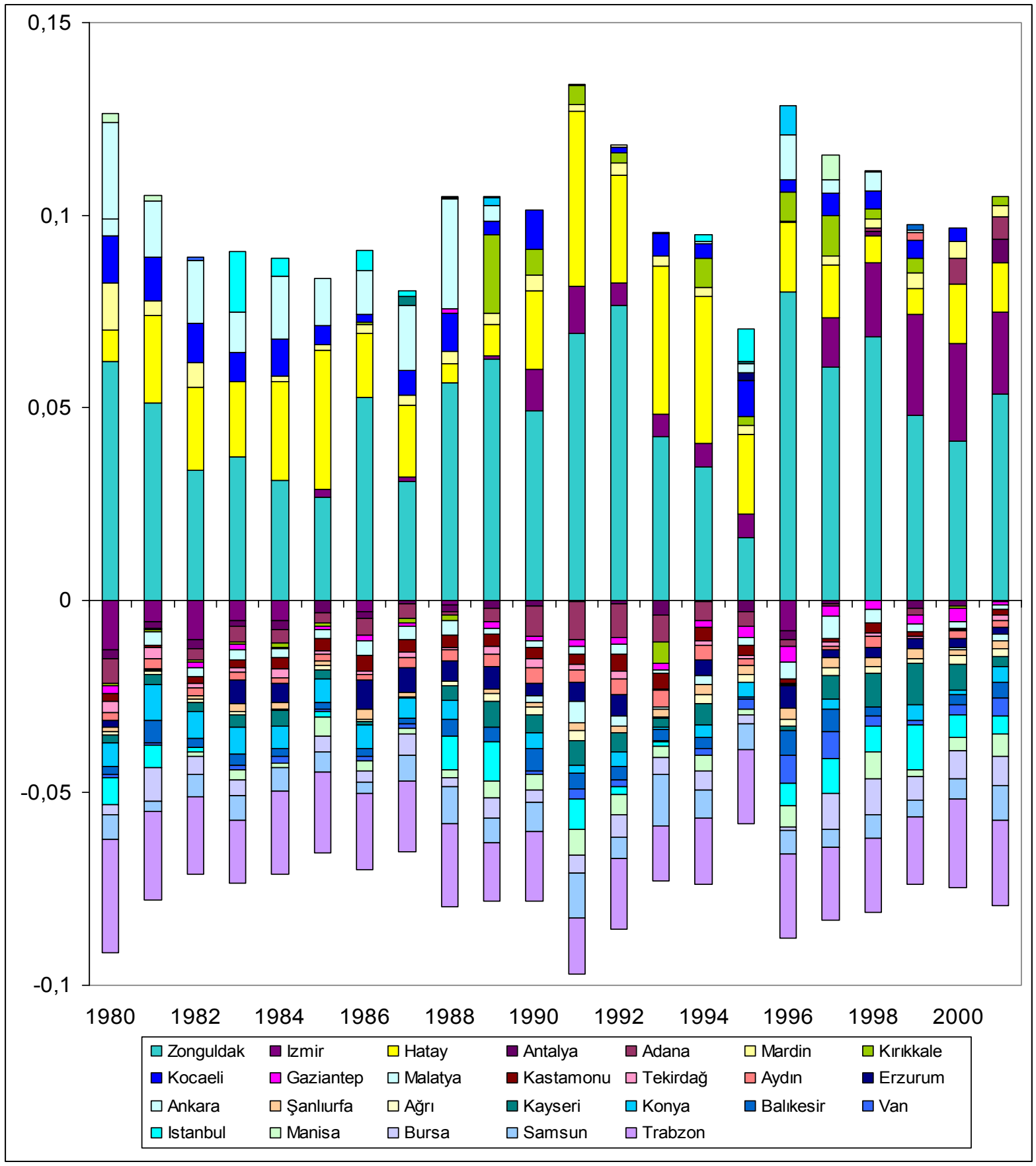
Figure 7: Pay Inequality by NUTS-2 (Private Sector)



Source: Author's Calculation

this paper only deals with NUTS-1 and NUTs-2. However, the inequality maps of NUTS-3 are provided for 1980 and 2001 in the appendix.

Figure 8: Pay Inequality by NUTS-2 (Public Sector)



Source: Author's Calculation

Figure 9: Theil Elements for NUTS-2 (Private Sector-1980)

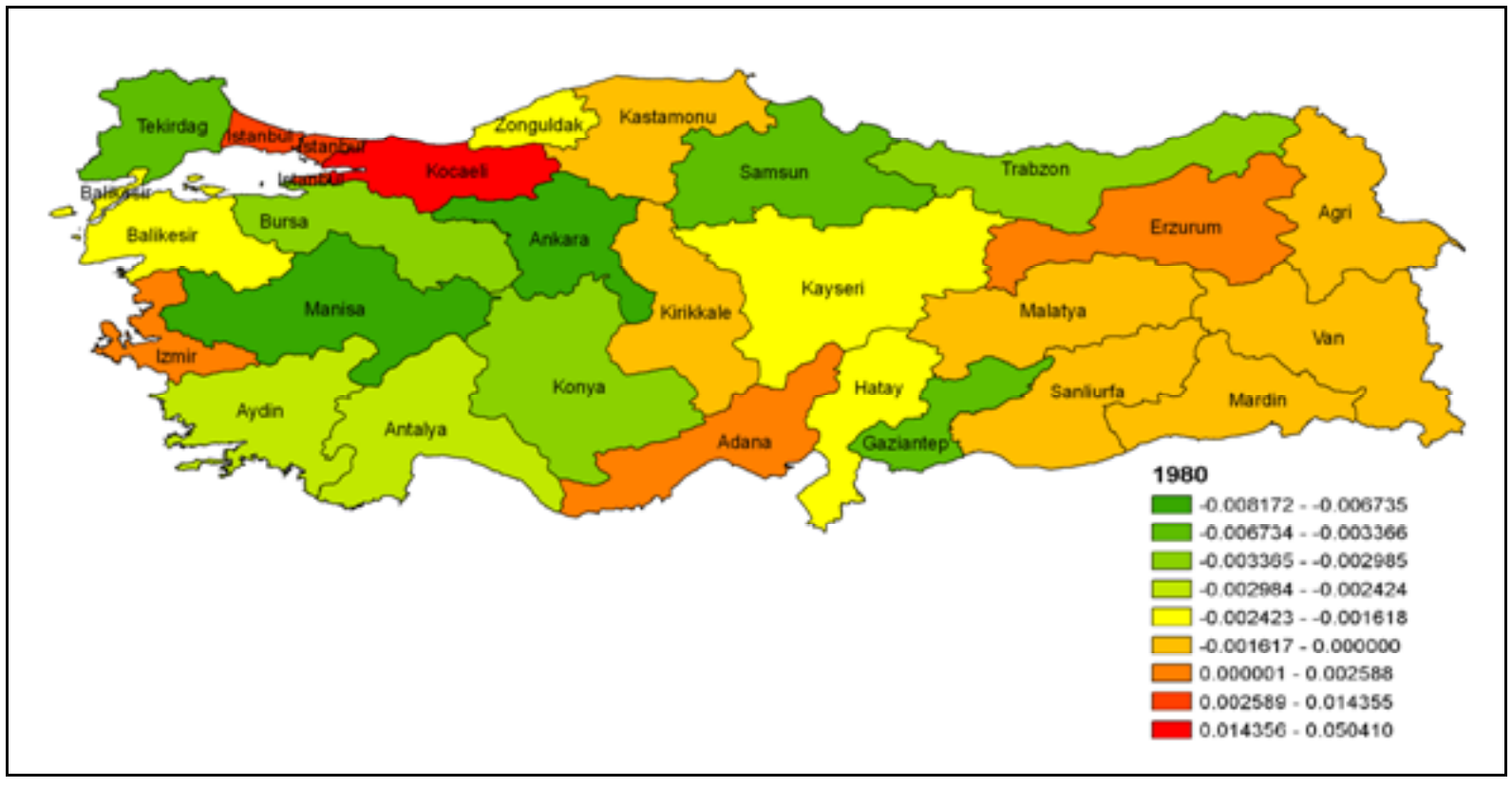
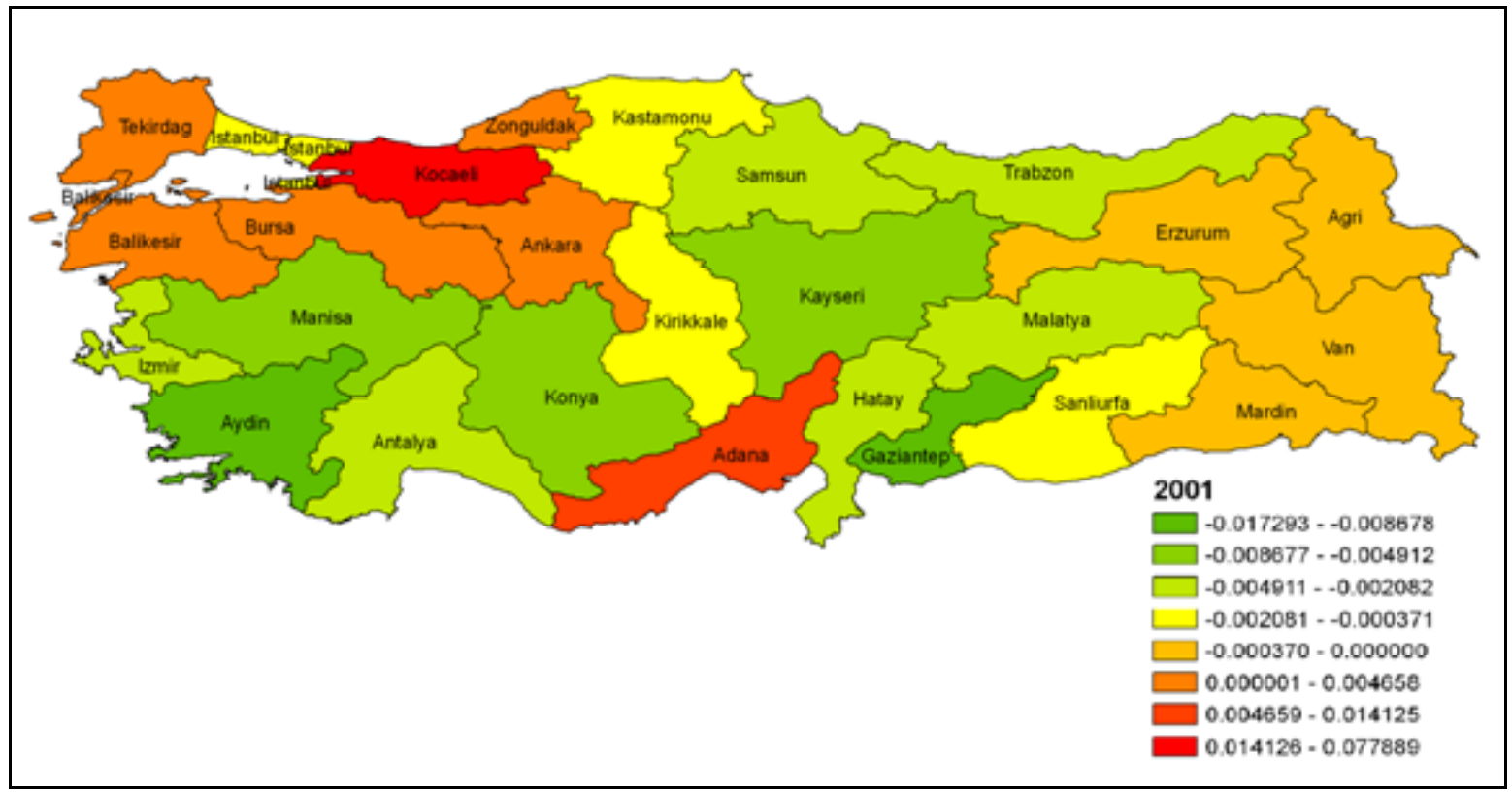


Figure 10: Theil Elements for NUTS-2 (Private Sector- 2001)



For the public sector, Zonguldak, Izmir and Hatay are main regions that contribute to inequality in the positive side while Trabzon, Samsun, Bursa, Manisa and Istanbul are major regions that suffer from lower pay.

The contribution of regions to inequality is closely related to the type of the main sector. In the public sector Zonguldak region is the primary area for coal and the Trabzon region (i.e. the province of Rize) is the main region for tea production. For private sector, İstanbul for the sectors of textile and chemicals, İzmir for food and textile, Kocaeli for metals and machines and equipments, Antalya for food and wood, Denizli for textiles, Gaziantep for textiles and food, Adana for textiles and chemicals, Kastamonu for wood and paper and publishing, and Adıyaman, Erzurum and Kırıkkale for chemicals are the leading cities.

5. Conclusion

We have examined pay inequality in the Turkish manufacturing sector between 1980 and 2001 for NUTS-1 and NUTS-2. Following up Elveren and Galbraith (2009), this paper provides some more information on pay inequality in the manufacturing sector. Also, since wages are a major component of income and manufacturing is a major part of all economic activity, we argue that this pay trend is broadly similar to the trend of income distribution for the entire economy. Our findings showed that pay inequality in Turkey increased after 1980, under the neo-liberal model in private sector while the public sector has displayed unchanged inequality throughout the period.

This general picture of the evolution of pay inequality shows a polarization in the Turkish manufacturing. In other words, it illustrates that there is not an effective regional development strategy. There are two crucial aspects of this polarization. First, when one examines the allocation of the subsectors by provinces, the most remarkable fact appears as the dominancy of the metropolitan areas in almost all manufacturing areas. This is not unexpected picture for a country like Turkey. In general, the provinces with the highest share of manufacturing in GDP are those who are located around Istanbul. Indeed, those major cities and a few new emerging regions such as Denizli and Gaziantep involve 73 % of the

total manufacturing labor force (Eraydın 2002). Second, there is an increase in regional specialization and industrial concentration for the Turkish manufacturing between 1980 and 2000 (Yaylalı et al. 2005; Yılmaz and Temurlenk 2005; Falcioğlu and Akgüngör 2008).

References

Adair C. (2006), 'Structural Change, Inequality and Growth in Mexico', The University Inequality Project Working Paper No. 35.

Aldan A., Gaygisiz E. (2006), 'Convergence Across Provinces of Turkey: A Spatial Analysis', Working Paper No. 0609, Research and Monetary Policy Department, Central Bank of the Republic of Turkey.

Calmon P.D.P., Conceição P., Galbraith J. K., Garza-Cantú V., Hilbert A. (2000), 'The evolution of industrial wage inequality in Mexico and Brazil', *Review of Development Economics*, 4(2): 194-203.

Celebioglu, F. and Dall'erba, S. (2009). "Spatial Disparities across the regions of Turkey: an exploratory spatial data analysis", *The Annals of Regional Sciences*, Published online: 05 July 2009.

Doğruel, F. and Doğruel A. S. (2003), 'Türkiye'de Bölgesel Gelir Farklılıkları ve Büyüme', in Köse A. H., Şenses F., Yeldan E. (eds), *Kuresel Duzen: Birikim ve Siniflar, Iletisim Yayinlari*, Istanbul

Duygan, B. and Guner N. (2006), 'Income and Consumption Inequality in Turkey: What role does education play?', in Altug S., Filiztekin A. (eds), *The Turkish Economy: The Real Economy, Corporate Governance and Reform and Stabilization Policy*, Routledge Curzon Studies in Middle Eastern Economies.

Elveren, A. Y. and Galbraith, J. K. (2009). "Pay Inequality in Turkey in the Neo-Liberal Era, 1980-2001", *European Journal of Comparative Economics,* Vol. 6, No. 2. pp. 177-206.

Eraydın, A. (2002), *Yeni Sanayi Odakları: Yerel Kalkınmanın Yeniden Kavramlaştırılması*, ODTÜ Mimarlık Fakültesi Basım İşliği: Ankara

Erdil, E. (1996), 'Inter-industry wage differentials: An analysis of wages in Turkish manufacturing industry, 1980/1985', *Middle East Technical University Studies in Development,* 23(1), 1-19

Falcioğlu, P. and Akgüngör, S. (2008), "Regional Specialization and Industrial Concentration Patterns in the Turkish Manufacturing Industry: An Assessment for the 1980-200 Period", European Planning Studies, 16(2), 303-323.

Filiztekin, A. (2008), "Türkiye'de Bölgesel Farklar ve Politikalar", TÜSİAD-T/2008-09/471.

Galbraith J. K. (2007), 'Global inequality and global macroeconomics', *Journal of Policy Modeling,* 29: 587-607.

Galbraith J. K., Spagnolo L., Pinto S. (2007), 'Economic inequality and political power: a comparative analysis of Argentina and Brazil', Business and Politics, 9(1), Berkeley Electronic Press.

Galbraith J. K., Kum H. (2005), 'Estimating the inequality of households incomes: toward a dense and consistent global data set', Review of Income and Wealth, 51(1): 115-143.

Gezici F. (2006), "New Regional Definition and Spatial Analysis of Regional Inequalities in Turkey Related to the Regional Policies of EU", *The Australasian Journal of Regional Studies*, 12 (1), 103-124

Gezici F., Hewings G. J.D. (2004), 'Regional Convergence and the Economic Performance of Peripheral Areas in Turkey', Review of Urban and Regional Development Studies, 16 (2), 113-132

Güven, A. (2007), "Türkiye'de İller Arası Gelir Eşitsizliğinde Teşvik Politikasının Rolü: Bir Ayrıştırma Analizi", *Akdeniz İ.İ.B.F. Dergisi* (14): 20-38.

Karaca O. (2004), 'Turkiye'de Bolgeler Arasi Gelir Farkliliklari: Yakinsama Var Mi?', Turkiye Ekonomi Kurumu Tartisma Metni 2004/7, at < http://www.tek.org.tr/dosyalar/O-KARACA.pdf>

Kılıçaslan, Y., Özatağan G. (2007), "Impact of Relative Population Change on Regional Income Convergence: Evidence from Turkey", *Review of Urban & Regional Development Studies*, 19 (3), 210-223.

Kirdar M G., Saracoglu D. S. (2006), 'Does Internal Migration Lead to Faster Regional Convergence in Turkey: An Emprical Investigation at < http://www.ersa.org/ersaconfs/ersa06/papers/784.pdf>

Köse S., Güven A. (2007), 'Government education expenditures and income inequality: evidence from provinces of Turkey', South-East Europe Review, 1/2007, 79-101

Memis E. (2008) Inter and Intraclass Distribution of Income: Turkish Manufacturing, 1970-*2000*, VDM Verlag Dr. Muller, Saarbrucken, Germany.

Obando J. C. (2006), 'Patterns of Wage Inequality in Costa Rica during the Structural Change, 1976-2004', The University of Texas Inequality Project Working Paper No: 36.

Öztürk, L. (2005), "Bölgelerarası Gelir Eşitsizliği: İstatistiki Bölge Birimleri Sınıflandırması'na (İBBS) Göre Eşitsizlik İndeksleri İle Bir Analiz, 1965-2001", Akdeniz İ.İ.B.F. Dergisi (10), pp. 95-110.

Öğüt, M. U., Barbaros R. F. (2003) "Regional Development Inequalities in Turkey: An Assestment on the Distribution of Investment Insentives" METU International Conference on Economics,

Sari R., Guven A. (2007), 'Kalkınmada öncelikli yöreler uygulamasının iller arası gelir dağılımı üzerindeki etkisi', ODTU Gelisme Dergisi, 34, 77-96

Spagnolo L., Munevar D. (2008), 'After Years of (Economic) Solitude: Neoliberal Reforms and Pay Inequality in Colombia', The University of Texas Inequality Project Working Paper No: 47.

Spagnolo L., Quezada A., Salinas V. (2008), 'Growth with Equity? Pay Inequality in Chile during the Democratic Era (1990-2006)', The University of Texas Inequality Project Working Paper No: 46.

Şenesen U. (2003), 'Bölgesel Gelir Dağılımı', in Balkan N., Savran S. (eds), Neoliberalizmin Tahribatı, Metis Yayinlari, Istanbul

Temel A., Associates. (1999), 'Functional distribution of income in Turkey', (mimeo) State Planning Organization: Ankara

Theil H. (1972), Statistical Decompostion Analysis: With Applications in the Social and Administrative Sciences, Amsterdam-London: North Holland Publishing Company

Voyvoda E., Yeldan E. (2001), 'Patterns of Productivity Growth and the Wage Cycles in Turkish Manufacturing', *International Review of Applied Economics*, 15(4), 375-396

Wang, W. C. (2007), 'Information Society and Inequality: Wage Polarization, Unemployment, and Occupation Transition in Taiwan since 1980', The University of Texas Inequality Project Working Paper No: 44.

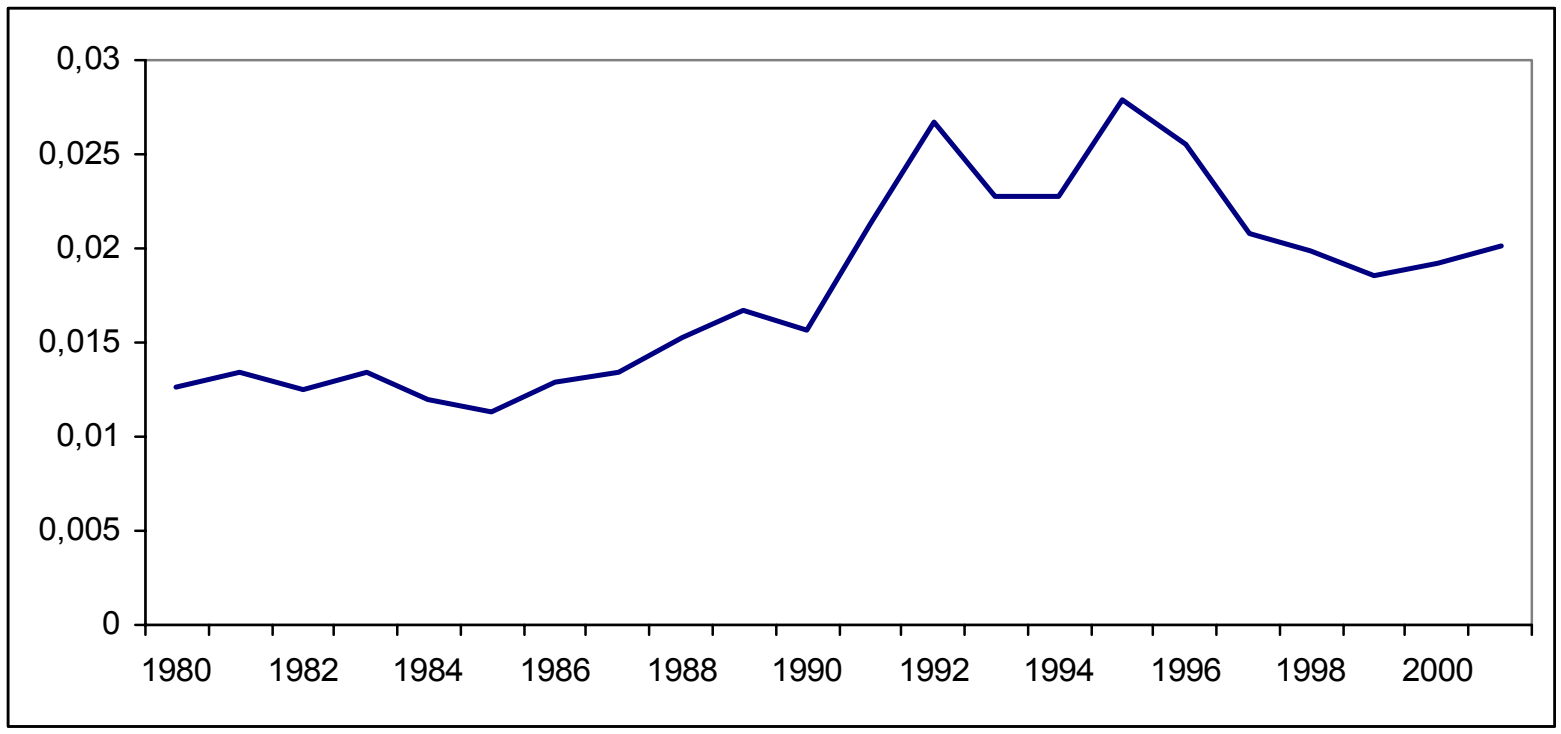
World Bank, (2000), "Turkey Economic Reforms, Living Standards and Social Welfare Study", Report No. 20029-TU, Poverty Recution and Economic Management Unit, World Bank: D.C.

Yaylalı, M., E. Oktay, Y. Akan (2005), "Kişibaşına Düşen GSYİH Değerlerine Göre Türkiye'deki Coğrafi Bölgelerin ve GSYİH'yı Oluşturan Sektörlerin Kümelenmesi", VII. Ulusal Ekonometri ve İstatistik Sempozyumu, 26-27 Mayıs 2005, İstanbul Üniversitesi. http://www.ekonometridernegi.org/bildiriler/o14s1.pdf

Yılmaz, Ö., Temurlenk, M. S. (2005), Türkiye'deki İstatistik Bölgelerin Kişi Başına Düşen Gelir Açısından Hiyerarşik ve Hiyerarşik Olmayan Kümelenme Analizi ile Değerlendirilmesi: 1965-2001, Atatürk Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi, 19 (2), 75-92.

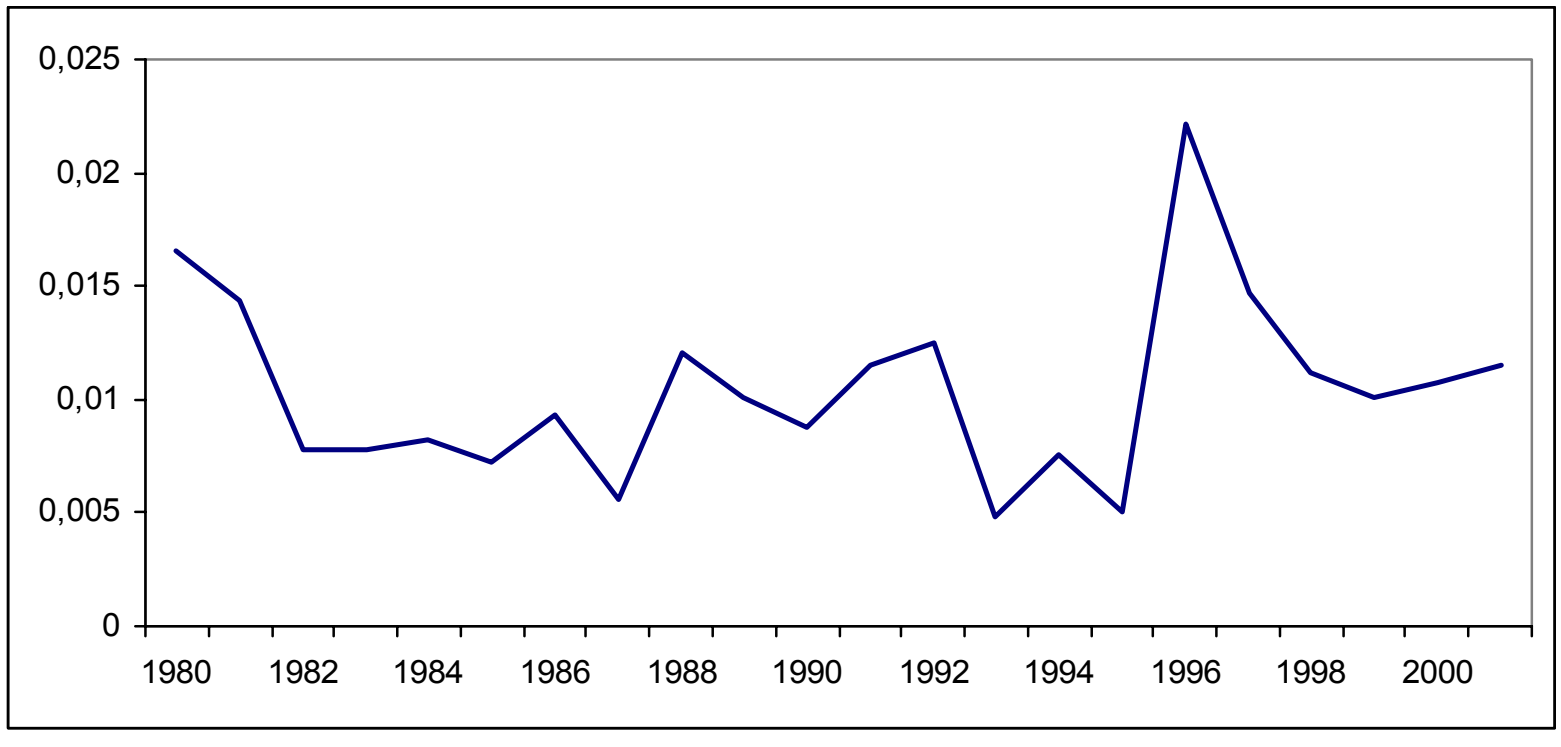
Appendix

Figure 11: Pay Inequality in the Manufacturing Sector: 1980 -2001 (NUTS-1, Private)



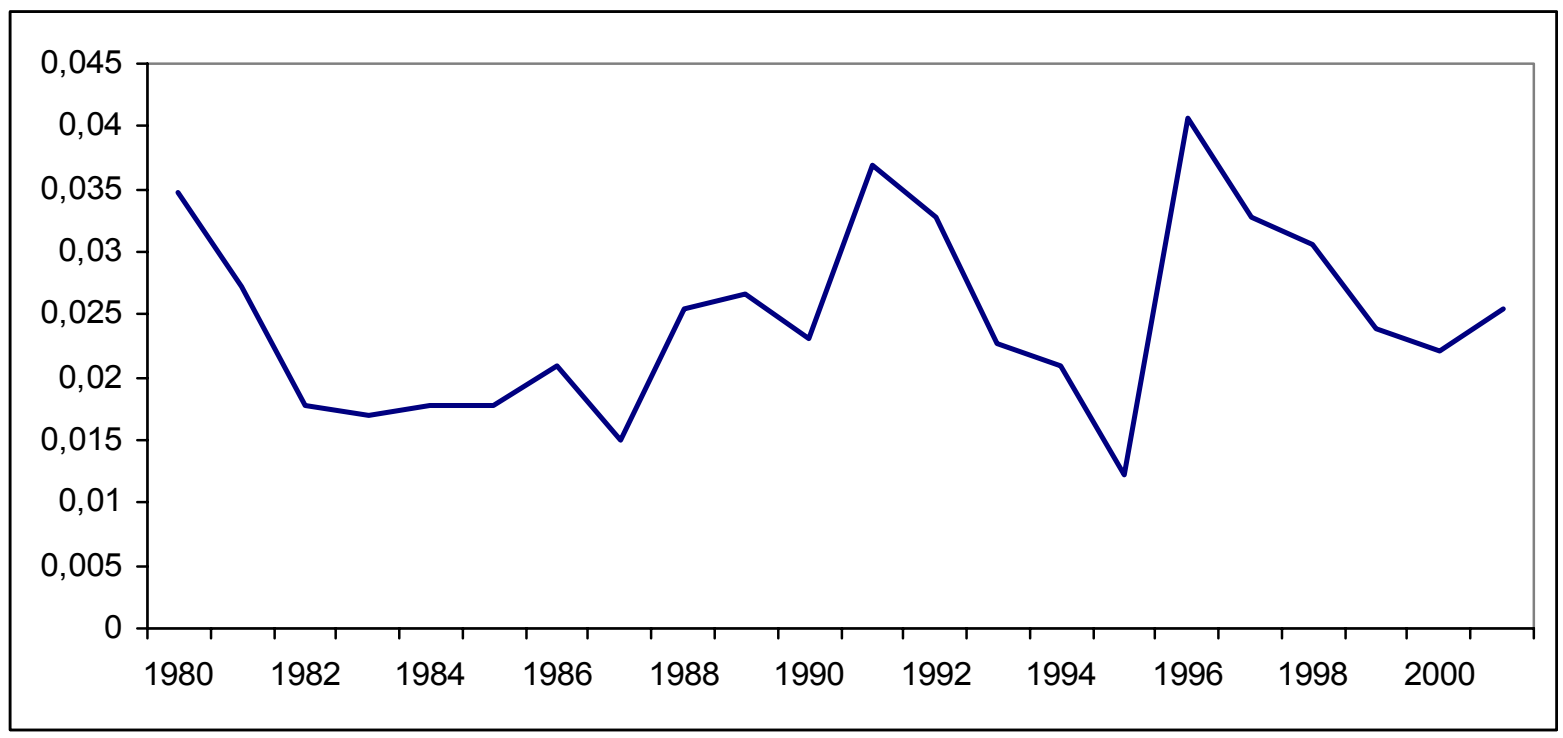
Source: Author's Calculation

Figure 12: Pay Inequality in Manufacturing Sector, 1980-2001 (NUTS-1, Public)



Source: Author's Calculation

Figure 13: Pay Inequality in Manufacturing Sector, 1980-2001 (NUTS-2, Public)



Source: Author's Calculation

Figure 14: Theil Elements for NUTS-3 (Private Sector-1980)

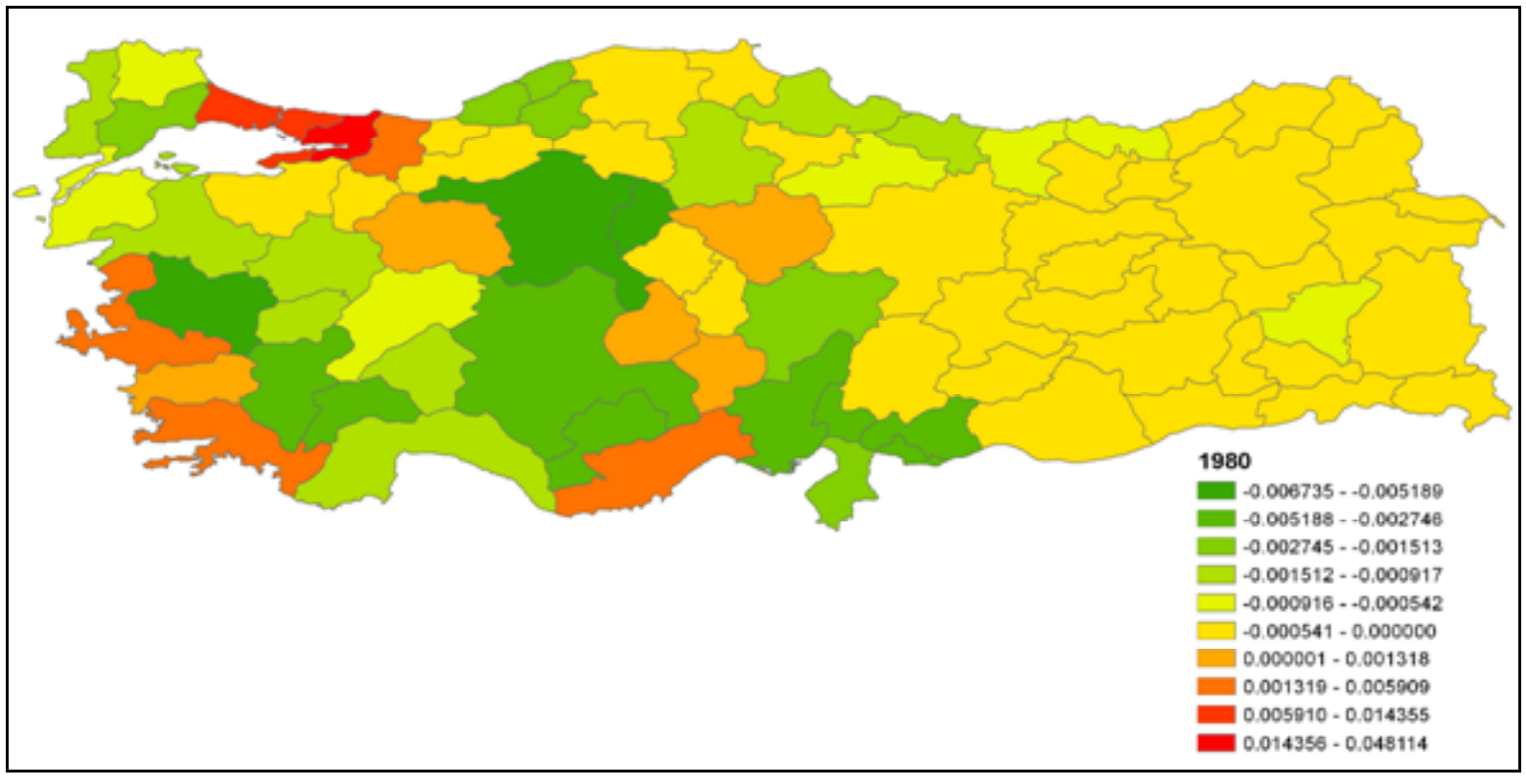


Figure 15: Theil Elements for NUTS-3 (Private Sector-2001)

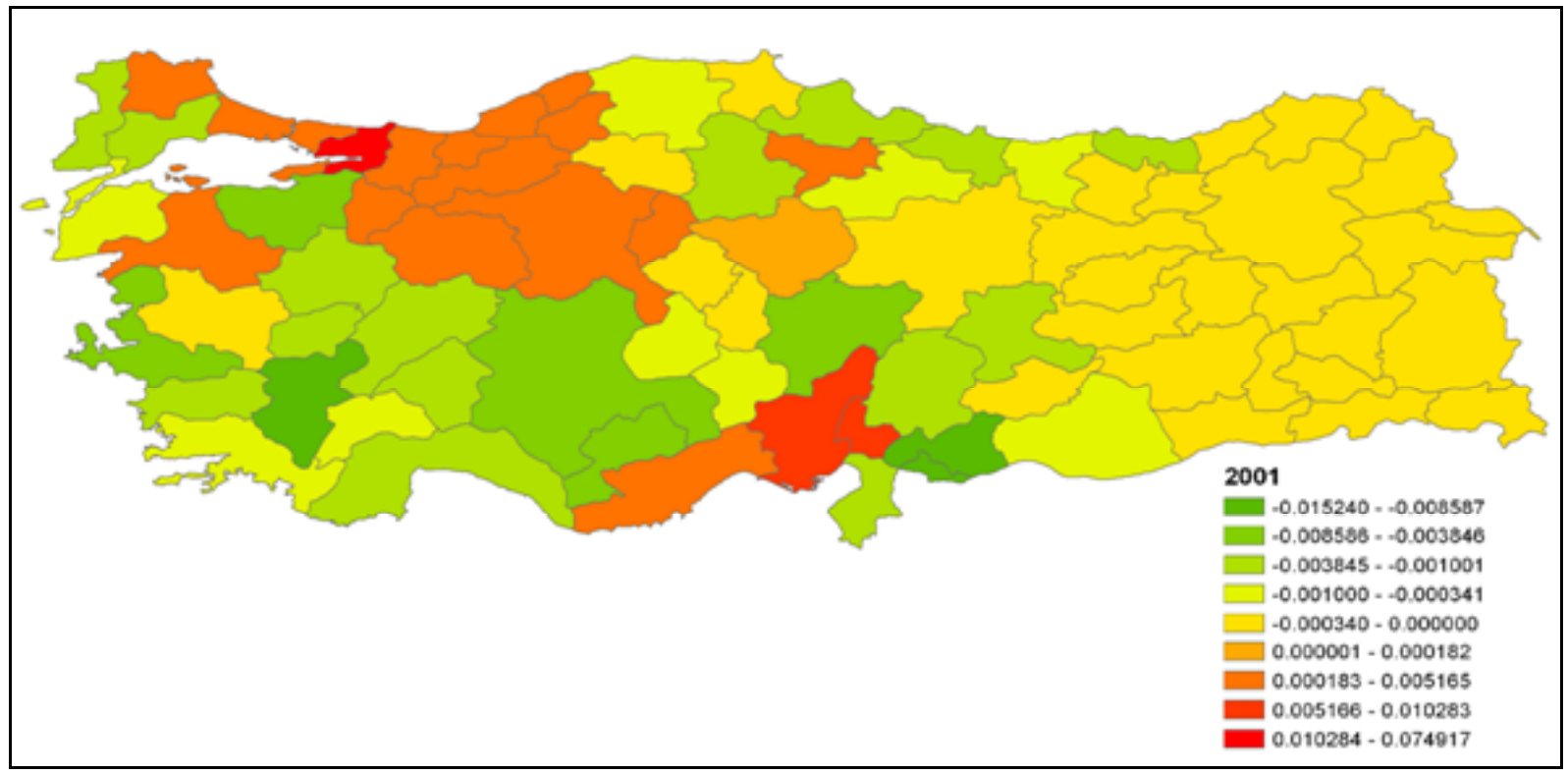
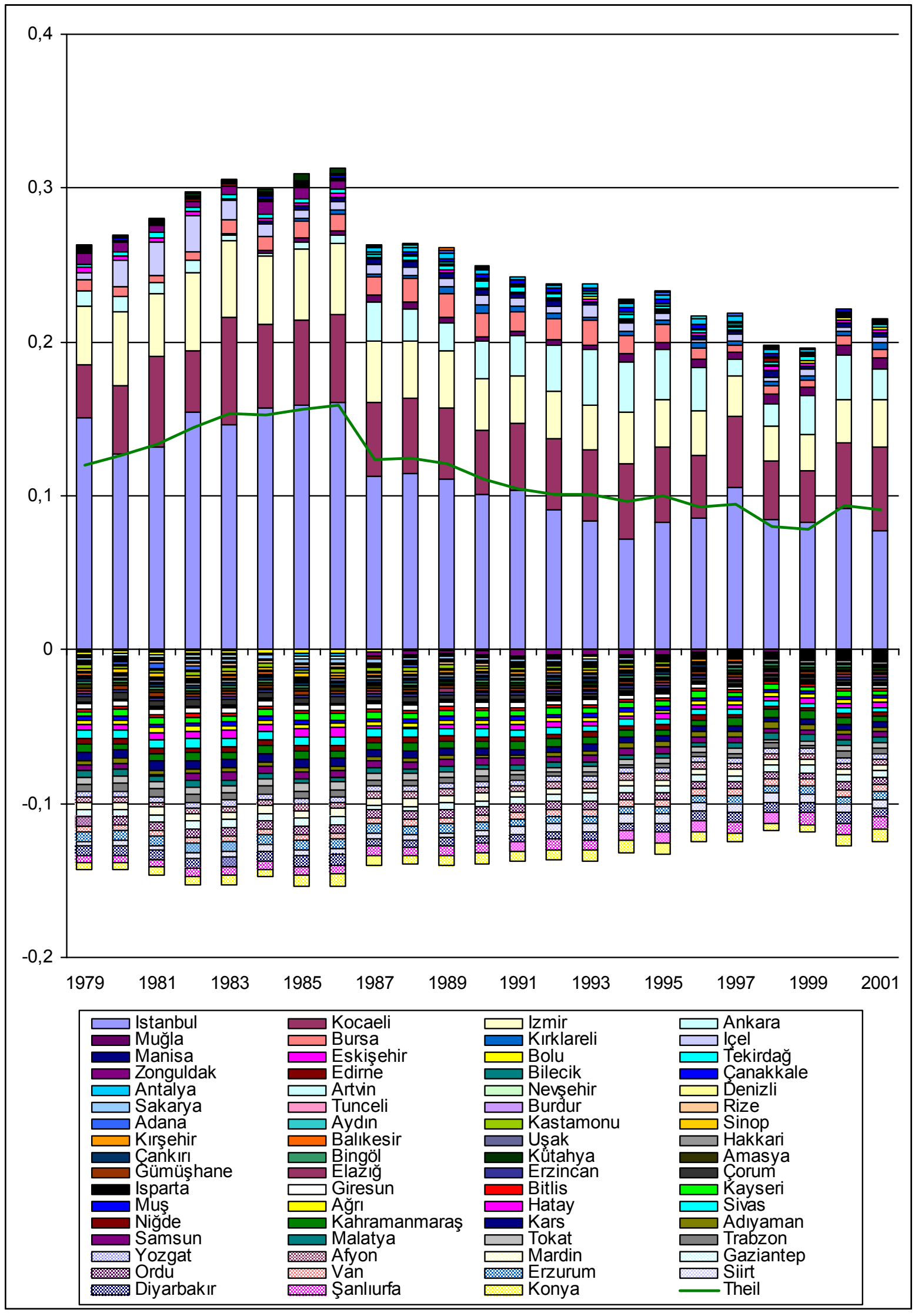


Figure 16: Provinces of NUTS-3

Figure 17: GDP per capita by provinces



Source: Author's Calculation

Table 1: Provinces by NUTS

NUTS-1	NUTS-2	NUTS-3
İstanbul	İstanbul	İstanbul (IB)
West Marmara	Tekirdağ	Tekirdağ (TG) Edirne (ED) Kırklareli (KL)
	Balıkesir	Balıkesir (BK) Çanakkale (CK)
Aegean	İzmir	İzmir (IZ)
	Aydın	Aydın (AY) Denizli (DN) Muğla (MG)
	Manisa	Manisa (MN) Afyon (AF) Kütahya (KU) Uşak (US)
East Marmara	Bursa	Bursa (BU) Eskişehir (ES) Bilecik (BC)
	Kocaeli	Kocaeli (KC) Sakarya (SK) Düzce (DU) Bolu (BL) Yalova (YL)
West Anatolia	Ankara	Ankara (AN)
	Konya	Konya (KO) Karaman (KR)
Mediterranean	Antalya	Antalya (AL) Isparta (IP) Burdur (BD)
	Adana	Adana (AA) Mersin (IC)
	Hatay	Hatay (HT) Kahramanmaraş (KM) Osmaniye (OS)
Central Anatolia	Kırıkkale	Kırıkkale (KK) Aksaray (AK) Niğde (NG) Nevşehir (NV) Kırşehir (KH)
	Kayseri	Kayseri (KY) Sivas (SV) Yozgat (YZ)
West Black Sea (4)	Zonguldak	Zonguldak (ZO) Karabük (KB) Bartın (BR)

	Kastamonu	Kastamonu (KS) Çankırı (CI) Sinop (SP)
	Samsun	Samsun (SS) Tokat (TT) Çorum (CM) Amasya (AM)
East Black Sea	Trabzon	Trabzon (TB) Ordu (OR) Giresun (GI) Rize (RI) Artvin (AV) Gümüşhane (GU)
North East Anatolia	Erzurum	Erzurum (EM) Erzincan (EN) Bayburt (BB)
	Ağrı	Ağrı (AG) Kars (KA) Iğdır (IG) Ardahan (AR)
Central East Anatolia	Malatya	Malatya (ML) Elazığ (EG) Bingöl (BG) Tunceli (TC)
	Van	Van (VA) Muş (MS) Bitlis (BT) Hakkari (HK)
Southeast Anatolia	Gaziantep	Gaziantep (GA) Adıyaman (AD) Kilis (KI)
	Şanlıurfa	Şanlıurfa (SU) Diyarbakır (DY)
	Mardin	Mardin (MR) Batman (BM) Şırnak (SR) Siirt (SR)