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PRIVATIZATION AND REGIONAL DISTRIBUTION OF MANUFACTURING IN TURKEY

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Privatization and regional distribution of manufacturing in Turkey[†]

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ABSTRACT

The state owned enterprises were crucial in the early stage of industrial development in Turkey. They were producer of basic consumption goods and contributed the building the entrepreneurial understanding, and hence the development of the private sector. State owned enterprises have played key role in almost all sectors of the Turkish economy, including manufacturing sectors and various infrastructural facilities. After 1980, the radical transformation has occurred in Turkish economic policies: The reform process included not only financial liberalization and trade reforms, but also the privatization of the state owned enterprises.

Initially, starting from the second half of 1980s, international organizations have advocated privatization as a "must" policy tool. The paper explores the effects of privatization on regional growth of Turkish manufacturing. The analyses are carried out at regional basis in order to detect to what extent the public sector is complement to or substitute of the private sector. The findings show that privatization has no perverse effects on the development of the manufacturing activities in the traditional and new industrial zones. However, its effects are in opposite directions in the poor regions.

Key words: Industrial policy, privatization, State Owned Enterprises, spatial distribution of manufacturing, shift-share analysis.

JEL codes: O1, O25, O43, G38, R12

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Privatization is not a panacea for solving poor economic performance.
Douglass C. North (1994:366)

1. INTRODUCTION

Throughout the period of 1930–1980, public investments in manufacturing, energy and mining sectors have been the engine of the industrialization in Turkey. State owned enterprises have played leading role not only producing the consumption good which was absent before 1930's, they were also main suppliers of the inputs for the private firms. During the early stages of the industrialization in Turkey, public investments in manufacturing had been the first non-primary economic activities in the most regions of the country, and the state owned enterprises accelerated the development of the market economy. Until recent years, state owned enterprises were still leading institutions particularly in the eastern part of Turkey. In addition to their contribution to Turkish economy as producer, the state owned enterprises also contributed the development of the entrepreneurial understanding and served as a school to train workers.

Starting from 1980, privatization became one of the primary objectives of the agenda of the Turkish policy makers. Consequently, the share of state owned enterprises in Turkish manufacture has drastically decreased during the last three decades. Privatization is a very controversial issue in the reform process of emerging and transition countries. While, initially, international organizations have recommended privatization without any reservation, in recent years this trust has been questioned.

The supporters of privatization stress efficiency gains through privatization, and the opponents focus on the nexus between growth and privatization. However, both sides either ignore economic and social externalities created by the public sector, or asymmetries resulting from the privatization within the country. In this paper, we aim to scrutinize asymmetric implications of the privatization experienced after 1984 across the regions of Turkey. We presume that the effects of the externalities created by the state owned enterprise may vary from region to region according to the degree of economic development: In the less developed regions, the externalities may be effective in stimulating private initiatives through enlargement of the local good and factor markets and through institutional deepening. This mechanism can be defined as the existence of complementary role of state. On the other hand, the scale advantage of state firms may hinder the entrance of private entrepreneurs, and the externalities created by the state firms can be suppressed. In this case, private and public sectors are substitute of each other rather than complement.

One of the apparent outcomes of the privatization is the diminution of the share of the state enterprises in the regional manufacturing employment. Higher value of this ratio shows that the state enterprises dominate the manufacturing activities within the region. Consequently, decrease in the ratio demonstrates to what extend the privatization is realized. The pre-privatization period of 1983-1985 is taken as the initial condition, and 1998-2000 is

the end years of the period covered in the analysis. The spatial statistical techniques we employ reveal that the privatization has no effects on the manufacturing development in the industrial zones. However, results show that this policy has hindered the development of manufacturing activities in poorly industrialized regions. For the analyses we employ the manufacturing data of annual manufacturing surveys of TURKSTAT (Turkish Statistical Institute).

The plan of the paper as follows: The second section outlines the main trends of the discussions on privatization, and the role of state in creating externalities. The role of state owned enterprises in the Turkish Economy is discussed briefly in the third section. The fourth and fifth sections are devoted to the quantitative analysis. The last section concludes the paper.

2. PRIVATIZATION AS A CONTROVERSIAL ISSUE

Privatization is a controversial issue in the discussions on the reform process of emerging and transition countries.[1] It has many proponents as well as opponents. Formerly, starting from the second half 1980s, international organizations, especially the IMF and the World Bank, have advocated privatization emphasizing the importance in many issues such as enhancing efficiency and productivity of state-owned firms. Privatization was the one of the leading policy advice of "Original" Washington Consensus.[2] The literature on privatization focuses on firm performance and microeconomic benefits, macroeconomic dimension and privatization strategies, labor market outcome, and use privatization revenue for debt payment or compensating current account deficit.

Theoretical discussions display ambiguity about the merit of privatization or private ownership, although empirical studies support private ownership in competitive markets (Shirley and Walsh, 2000).[3] Megginson and Netter (2001) emphasize the similar outcome by reviewing 61 empirical studies: they found that firm performance is better in privately owned firms than state owned enterprises. Djankov and Murrell (2002) survey more than 100 empirical studies on the effects of privatization in transition countries and market economies. We may stress two different outcomes of this study: First, "*...state ownership within*

[1] For latest findings about the privatization implementation in the world see Kikeri and Kolo (2005)

[2] "Original" Washington Consensus" based on the Brady Plan which has been prepared for the solving debt problem of Latin American Countries in 1989 (Kuczynski, 2003). Stiglitz (2002: 53) states that; "*Fiscal austerity, privatization, and market liberalization were the three pillars of Washington Consensus advice throughout the 1980s and 1990s."* However, the last decade has witnessed heavy criticism on the "Original" Washington Consensus, including from its creator of this policy recommendation. Williamson (2004) has self critics on the Original Washington Consensus. Dani Rodrik (2006: 973) criticized policy advices as:
"... any well-trained and well-intentioned economist could feel justified in uttering the obvious truths of the profession: get your macro balances in order, take the state out of business, give markets free rein."Stabilize, privatize, and liberalize" became the mantra of a generation of technocrats who cut their teeth in the developing world and of the political leaders they counseled."

[3] Shirley and Walsh (2000) draw the attention to this outcome by surveying very large theoretical and empirical literature on privatization, and private and state ownerships.

traditional state firms is less effective than all other ownership types, except for worker owners who have a negative effect…", and second *"state ownership within partially-privatized firms is surprisingly effective…*" Djankov and Murrell (2002: 741). Kikeri and Nellis (2004) emphasize the microeconomic benefits of privatization and they mention about improving firm performance for competitive sectors and also, with the appropriate policy and regulations, improving welfare effects of infrastructure privatization. Bourguignon and Sepúlveda (2009) stress the "*distributional effects of privatization*."

Skeptic views on privatization underline the effects of privatization at the macroeconomic level. Regarding transition countries Godoy and Stiglitz (2006) emphasized the speed of privatization and assert that "*…contrary to the earlier literature, the speed of privatization is negatively associated with growth…*" Joseph Stiglitz has further criticisms on the privatization-growth nexus and the speed of privatization. He strongly calls attention to the fact that *"… there are some important preconditions that have to be satisfied before privatization can contribute to an economy's growth. And the way privatization is accomplished makes a great deal of difference. (…) Unfortunately, the IMF and the World Bank have approached the issue from a narrow perspective – privatization was to be pursued rapidly. Scorecards were kept for the countries making the transition from communism to the market: those who privatized faster were given the high marks. As a result, privatization often did not bring the benefits that were promised. The problems that arose from these failures have created antipathy to the very idea of privatization."* (Stiglitz, 2002: 54).
Bennett *et al* (2004) discuss the effect of alternative privatization strategies on growth for transition countries. Bartolotti and and Perotti (2007) draw attention to the weak institutions.

Faggio (2006) investigates the link between privatization strategies and employment level: her results confirm that full privatization creates high job destruction in the privatized enterprises. Another issue should be added to the ongoing debate is the welfare dimension of privatization. Birdsall and Nellis (2002) examine the distributional effects of privatization in developing and transition countries and discuss "which groups have gained or lost" and the environments in which groups are gaining or losing.[4] William Easterly is also very skeptical about the gains of privatization: He thinks that by selling profitable state enterprises, governments are "eating the future." The other ways of "*eating the future*" are incurring debt and cutting investment in infrastructure (Easterly, 2002: 112). The privatization process and corruption tend to move together in many countries. Easterly (2002: 112) calls our attention to this issue as well, using a country case from Africa.

However, the paper does not deal with these issues such as firm performance or welfare gains or losses through privatization. Rather, it focuses on the complementary role of state in the less developed regions. We assume that the effects of externalities created by state owned enterprise varies across regions according to the degree of economic development. The market institutions are not strong in the lagged regions. In that case, the externalities created by state owned enterprises may be important tools to motivate local private entrepreneurship.

[4] Later, Nellis (2003) refuted the negative effects of privatization on inequality and poverty.

State owned enterprises could also help the institutional deepening and improvement of local markets. At this point, we may refer to Marshallian type externalities: Alfred Marshall has defined the environment that creates externalities (Marshall ([1890] 1920: Chapter 10). Krugman (1999) elucidated these externalities, and defined positive externalities as market size effects, thick labor markets and pure external economies. Externalities are the main forces that lead to agglomeration formation. It is possible to classify externalities (i.e. Marshallian type) as "technological" and "pecuniary" externalities; Fujita and Thisse widely discuss these two types of externalities and they state that "*... technological and pecuniary externalities are natural components of any complete explanation of economic clustering.*" (Fujita and Thisse (2002: 299).[5] They also draw attention to the origin and the structure of two type externalities: "*... the origin of pecuniary externalities is clearer*" while"*... technological externalities often have the nature of a black box*" (Fujita and Thisse (2002: 299). We assume that the complementary role of state in the less developed regions may create both types of externalities.

However, it is not possible to argue that the effect of state in economic activities is one dimensional: Scale advantage of state firms may discourage the entrance of private firms and dampens down the development of private activities. Thus, state firms may create negative externalities in a region, which stimulate centrifugal forces. This can be defined as the case where state and private sectors are substitute.

3. RISING AND DECLINING ROLE OF STATE IN TURKISH ECONOMY

At the beginning of 20th century, Turkish manufacture was primitive, due to the war conditions in Anatolia. The First World War and the Turkish War of Independence had destroyed the existing economic structure. In addition to the war conditions, the migration of minority population, which has been decisive in the various parts of the economy, has created a huge skilled labor gap in the Turkish economy in those days. In the early years of the Republic, the whole industry has consisted of small scale enterprises with two or three workers, except Istanbul, Izmir and Adana which had been the main industrial centers of the Ottoman Empire. The minorities had large control on the production of basic tools and equipments as owners of small enterprises as well as skilled workers. The migration of minorities, especially the migration of the Greek people from Anatolia, has suspended large scale domestic trade and tradable agricultural production due to scarcity of equipments (Cecen, Dogruel and Dogruel, 1990: 6).

The lack of entrepreneurs has forced the government to create an entrepreneurial class. The merchants and the *eşraf* (the local Anatolian notables) have been the candidates for new businessmen. This was not an easy task for the founders of the republic; some attempts have failed dramatically. Just to illustrate with a story: The first sugar factory of the Republican

[5] Fujita and Thisse (2002: Chapters 8 and 9) includes detailed explanations and models for technological and pecuniary externalities.

Era was founded by a private entrepreneur in the western part of Turkey. The sugar plant was constructed with the government loans. Nevertheless, after few years, the owner has abandoned the plant due to the lack of skilled workers and the shortage of high-quality row materials. Afterward, the government has been forced to take over the control of the sugar factory (Dogruel and Dogruel, 2006: Chapter 4.2).

Consequently, in 1920s and 1930s, in the early phases of the industrial history of Turkey, the state has acted as an entrepreneur in many areas, such as sugar, tobacco, iron and steel and so forth. Public leadership in industrialization has started relatively earlier in Turkey. Shirley and Walsh (2000) state that: "*state ownership experienced a period of popularity among developed nations in the 1930's, 1940's and 1950's, and in developing nations throughout the postwar period.*" Surprisingly, in 1950s, rising demands from private entrepreneurs to liberalize the economy and to privatize the state firms were creating unbearable pressure on the governments.[6] The discussions are basically carried out by referring to political concepts rather than economic ones, such as the paternalistic nature of the state, need for liberal political and economic structure. The problem however was beyond the political dimension: Lack of capital, insufficient entrepreneurial experiences and scarcity of qualified workers were crucial obstacles on the industrialization and economic development. Therefore, the presence of the state owned enterprises were inevitable in this period, and we have seen the state firms not only producers of basic consumption goods, but also main domestic producer of the essential inputs for the manufacturing. Turkey has implemented a successful import substitution strategy by maintaining state support.

However, the presence of the state owned enterprises in the Turkish economy was not only an instrument for industrialization; at the same time this policy had some spatial effects. In the early periods, state presence in production activities via state owned enterprises has stimulated indirectly development of local market in the lagged regions of Turkey. As Fujita and Thisse (2002: 299) highlighted, technological and pecuniary externalities matter for efficiency of the market outcome. And, the state owned enterprises contributed to the development of the market by stimulating demand in the region. It is possible to describe these effects as complementary externalities. TEKEL,(tabac monopoly) has been one of the state owned enterprise that stimulate formation of market mechanisms in the poor regions as well as creating employment and improving skill level.

In 1980, following the severe crises of the late 1970s, Turkey has implemented a comprehensive stabilization program. The government also adopted a new industrialization policy where the import substitution strategy was replaced by export promotion strategy. Trade liberalization and financial liberalization are the main policy changes during the two decades following 1980.

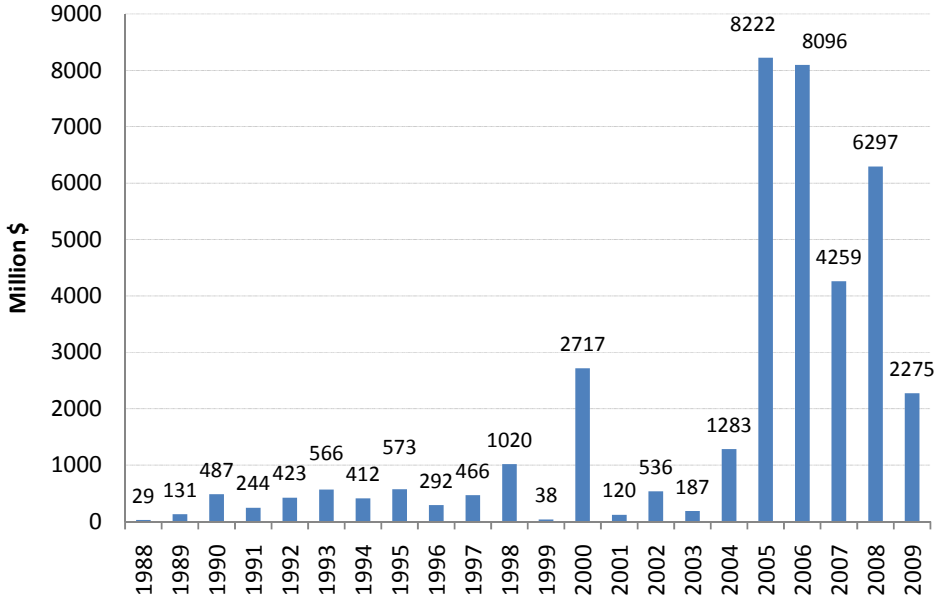
[6] In the 1948 Turkish Economic Congress, state intervention has strongly criticized and the delegates of the Congress have discussed "how the presence of the government can be removed from the economy?" (DPT, 1997).

The stabilization program also had massive privatization targets. The government has decided to withdraw gradually from production of goods, and the privatization implementation has started in 1984.[7] At the early years of the reform, the implementation of privatization was slow. The governments could not abruptly end the presence of the state in the economy. From 1986 to the end of 2009, more than two decades, privatization revenue totaled about 38.7 billion dollars. More than three-quarters of total privatization revenue was received during the last five years (Figure-1).[8] The privatization efforts before 2001 was basically concentrated in food manufacturing (311 and 312), manufacture of textile (321), manufacture of wood products (331), manufacture of nonmetallic products (369), and manufacture of transport equipments (384).[9]

This slow speed of privatization before 2000s may be attributed largely to the political unwillingness. The state owned enterprises in the Turkish economy were very powerful tools to control the economy at the hand of political and bureaucratic elites. Turkish political elites tend to use all available tools to reallocate the investable funds and to dictate their priorities to the entrepreneurs (Dogruel and Dogruel, 1994). Another reason behind the unwillingness may be the uneven industrial development in different geographic regions of Turkey. Regional disparities are immense in Turkey[10], and eastern side of the country has been suffering from economic backwardness throughout the decades. The openness did not change this situation. Regional distribution of private manufacturing sector did not change substantially (Dogruel and Dogruel, 2011). Food manufacturing (311 and 312) and manufacture of textile (321) are the only manufacturing activities in poor regions. Despite the relatively large privatization in these sectors, there still are number of regions where state has more than 50 % share in manufacturing value added and employment in 2000 (Table A1 and A2). It is possible to deduce that the political and bureaucratic elites may be reluctant to speed up the privatization due to its unpredictable social and political consequences.

[7] Republic of Turkey Prime Ministry, Privatization Administration (http://www.oib.gov.tr/Privatizationinturkey.zip)
[8] Calculated using the data in Figure-1.
[9] The sectoral classification is ISIC Rev-2.
[10] An earlier study shows that major industrial zones has been located in the western part of Turkey (Dogruel, Dogruel and Kancal, 1992). Dogruel and Dogruel (2003) analyze the regional convergence in Turkey. This study concludes that only wealthy provinces located western regions of the country converge. This result shows that the regional differences did not change over decades. There is a growing literature on regional differences and convergence issue in Turkey. Here, we may cite some of them: among others Filiztekin (1998), Altinbas, Gunes and Dogruel (2002), Karaca (2004), Erlat (2005), Erlat and Ozkan (2006), Kirdar and Saracoglu (2006) and Yildirim and Ocal (2006). Karahasan (2010) investigates dynamics and variation of firm formation at the regional level in Turkey. Considering methodological approach Erlat (2001) is another interesting study on the Turkish regional structure: it uses shift share analysis in order to examine "growth performance of the provinces" for 1975-1996 period.

Figure 1: Privatization Revenues



Source: Republic Of Turkey Prime Ministry Privatization Administration

4. DATA AND QUANTITATIVE FINDINGS

In order to track the effects of the privatization on the manufacturing activities within the regions, we employ the manufacturing employment data of annual manufacturing surveys of TURKSTAT (Turkish Statistical Institute). One of the apparent outcomes of the privatization is the diminution of the share of the state enterprises in the regional manufacturing employment. The higher value of this ratio shows that the state enterprises dominate the manufacturing activities within the region. Consequently, decrease in the ratio demonstrates to what extend the privatization is realized. Data for the pre-privatization period of 1983-1985 give the initial condition. Figure-1 displays that the privatization implementations have been accelerated in the recent years following a slow privatization period. However, the main source of the increase in privatization revenues during the second half of 2000s is privatization of state owned enterprises in non-manufacturing sectors. The modest privatization revenues before 2000 are received mainly from the privatization of manufacturing state enterprises. Therefore, we use latest available data for the years of 1988-2000 in order to observe the degree and the effects of the privatization. Tables A1 – A5 in the appendix document the changes in the share of state owned enterprises in employment and value-added by regions, and the changes in the performances of the manufacturing sectors in the regions. Table-A6 gives the number of state firms by region.

If presence of the state in the region creates a crowding-out effect on the private initiatives, the manufacturing activities in the region should speed up following the privatization, and share of the region in total manufacturing employment should rise due to

expansion of the manufacturing activities at a higher rate than the national level. This can be considered as an existence of the substitution between private and public sectors. Alternatively, not only presence of state enterprises has a direct effect on the enlargement of the markets in a region, but they may also create externalities through inducing the institutional deepening.[11] In this case, privatization can hinder the growth of the manufacturing sector in the region, and as a result, the manufacturing share of the region in the country decreases.

Value-added can be considered as an alternative indicator to employment. Value-added data are reported as the market values by the TURKSTAT. Since the prices of the productions of the state enterprises were basically controlled by the government during the period of 1983-2000, market values of these products vary with the political decisions. Therefore, we prefer employment data. After 2001, the data handling method has been changed by TURKSTAT and the new data set is available for the years 2003, 2004, 2006 and 2008 by regions. However, due to the fundamental changes in the nature and the content of the surveys, the new series is not compatible with the old data. Therefore, the analyses do not cover the post 2000 period.[12]

We classified 26 NUTS2 regions into five groups considering primarily their share in the total manufacturing employment as the average of the initial period 1983-1985 and of terminal period 1998-2000. We also consider certain industrialization characteristics of the regions. These are i) geographic location of the region, ii) whether a region is in the hinterland of another region or it is an industrial cluster, and iii) whether the region has an industrial tradition or not. A region is called an *industrial zone* if its average employment share is greater than 4 percent. Average employment shares in *hinterlands* and *emerging regions* are 3 to 4 percent, and they tend to increase during the period the paper covers. Hinterland region is the neighbor of an industrial zone. In the New Geography Models, the formation and externality creation capacity of an agglomeration are related to these types' proximities in a location.[13] Therefore, a region is called a *hinterland region* if it is in the hinterland of an industrial zone; otherwise, an *emerging region* if it is a cluster without any proximity to an agglomeration. A region is called a *minor industrial region* if its average share of employment is above 1.5 percent and not classified as *hinterlands* and *emerging regions*. The regions are classified as *poorly industrial regions* if their average shares of employment are below 1.5 percent (Table-1). The map in Figure-2 illustrates the five industrial regions classified according to their manufacturing share and industrialization characteristics. However, in the paper, emerging regions and minor industrial regions are evaluated jointly.

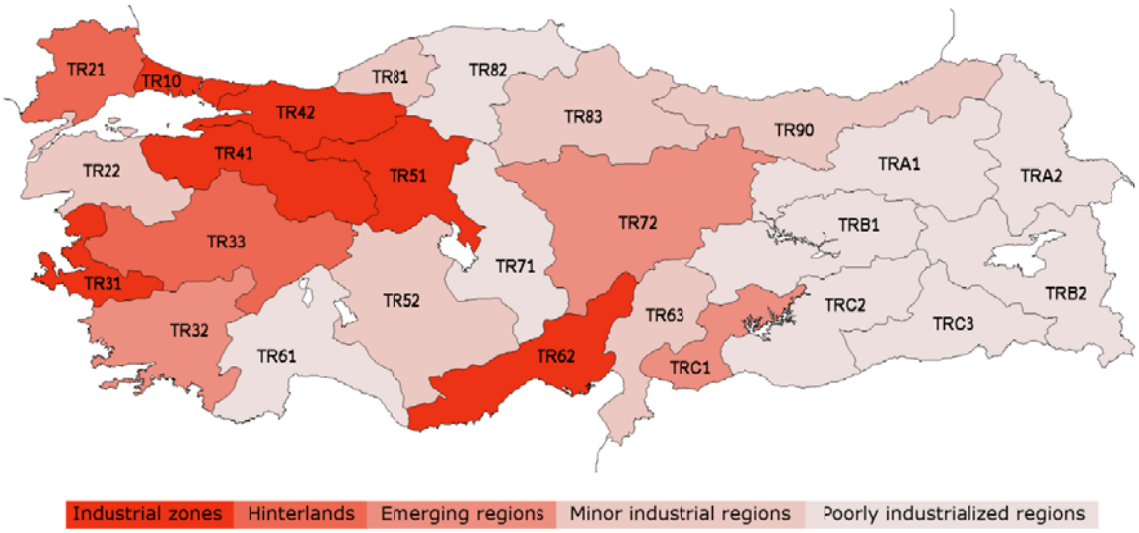
[11] Zhao *et al* (2005: 5) state that the "*Institutional development reduces the cost of doing business and promotes entrepreneurial entry. (...) The benefit of institutional improvement to institution-dependent existing firm we call the external reliance effect. That to potential entrants we call the entry push effect.*"
[12] 2001 is omitted due to the financial crisis.
[13] For the origin of the New Geography Model see Krugman (1991), and more comprehensive discussions are given in Fujita (2010).

Table-1: Industrial regions by industrialization characteristics

		Average share of manufacturing employment	
Industrial zones		**1983-1985**	**1998-2000**
İstanbul	TR10	30.42	27.08
İzmir	TR31	9.29	8.38
Bursa, Eskişehir, Bilecik	TR41	7.73	11.82
Kocaeli, Sakarya, Düzce, Bolu, Yalova	TR42	7.93	8.50
Ankara	TR51	5.61	5.23
Adana, Mersin	TR62	6.15	4.21
Regional total		***67.14***	***65.23***
Hinterlands			
Tekirdağ, Edirne, Kırklareli	TR21	2.91	6.03
Manisa, Afyonkarahisar, Kütahya, Uşak	TR33	3.13	3.73
		6.04	**9.77**
Emerging regions			
Aydın, Denizli, Muğla	TR32	2.25	4.16
Kayseri, Sivas, Yozgat	TR72	2.21	2.72
Gaziantep, Adıyaman, Kilis	TRC1	1.19	2.25
Regional total		***5.66***	***9.14***
Minor industrial regions			
Balıkesir, Çanakkale	TR22	1.58	1.50
Konya, Karaman	TR52	2.42	2.11
Hatay, Kahramanmaraş, Osmaniye	TR63	2.38	1.85
Zonguldak, Karabük, Bartın	TR81	2.65	1.62
Samsun, Tokat, Çorum, Amasya	TR83	2.79	1.80
Trabzon, Ordu, Giresun, Rize, Artvin, Gümüşhane	TR90	3.71	2.16
Regional total		***15.53***	***11.03***
Poorly industrialized regions			
Antalya, Isparta, Burdur	TR61	1.39	1.08
Kırıkkale, Aksaray, Niğde, Nevşehir, Kırşehir	TR71	0.58	1.11
Kastamonu, Çankırı, Sinop	TR82	0.62	0.52
Erzurum, Erzincan, Bayburt	TRA1	0.61	0.29
Ağrı, Kars, Iğdır, Ardahan	TRA2	0.22	0.16
Malatya, Elazığ, Bingöl, Tunceli	TRB1	1.30	1.07
Van, Muş, Bitlis, Hakkari	TRB2	0.26	0.24
Şanlıurfa, Diyarbakır	TRC2	0.39	0.24
Mardin, Batman, Şırnak, Siirt	TRC3	0.25	0.12
Regional total		**5.63**	**4.83**

Source: Calculated from Table-A4.

Figure 2: Industrial regions in Turkey



The regions in the first group, Istanbul (TR10), Izmir (TR31), Bursa (TR41), Kocaeli (TR42), Ankara (TR51), and Adana (TR62), are main industrial centers of Turkey.[14] This group includes the leading industrial provinces such as Istanbul, Izmir, Adana, Kocaeli and Bursa. Istanbul and Kocaeli is the "industrial belt" of Turkey. Initially, Bursa and Kocaeli have grown as the industrial hinterland of Istanbul. During the last two decades, Bursa has become more important business district than Adana. Kocaeli, on the other hand, became eastern part of the "industrial belt" of Turkey.

There are significant decreases in the shares of the state enterprises in the manufacturing employment of the regions. In Istanbul (TR10), the shares of the state enterprises decrease from around 9 percent to below 3 percent. During this period, share of Istanbul in total manufacturing employment and value added also slightly decreased. This change can be attributed to the policies for deindustrialization of Istanbul (Dogruel and Dogruel, 2010). Similar trend is observed for Izmir (TR31) also. Decrease in the share of state enterprises in employment has small effects on the share of Izmir in the total employment and value added. Most remarkable decrease in the share of state enterprises in the regional employment are seen in Bursa (TR41) and Kocaeli (TR42) regions: from 20's and 30's percent to around 5 and 7 percent respectively. However, drastic decline in the share of the state enterprises in these industrial zones do not deteriorate the manufacturing activities

[14] During the period we cover, a part of Ankara province was reorganized as a new province called Kırıkkale, and this new province classified in another Level-2 region (TR71) which can be classified as minor industrial region. Ankara region (TR51), as a capital, became one of the centers of gravity for the industrial activities. However, during the period we cover, one of the large-scale state owned enterprise located in Kırıkkale was moved from TR51 to TR71. Although, data for these Level-2 regions are reported in the tables, due to this shift, we disregard these regions in the following discussion.

in the regions. Contrary, the shares of these regions in total manufacturing employment slightly increased during the privatization period. The data shows that the privatization policies have no perverse effects on the development of the manufacturing sectors in this group of regions. However, the increasing share of industrialization in these regions cannot be attributed solely to removal of the state enterprises. Fast growing sectors are located in these regions. As an exception in this group, we observe a decline in the share of employment created by the manufacturing sectors along with the privatization in Adana region (TR62). Considering the recent trend in this region, the weakening of the manufacturing is basically an outcome of the reallocation of the private sectors.

Tekirdağ (TR21) and Manisa (TR33) are selected as the hinterlands of the TR10 and TR31 respectively. Aydın (TR32), Kayseri (TR72) and Gaziantep (TRC1), are the regions which are emerged after 1980 as the new industrial centers. We observe significant decreases in the share of state owned enterprises in the employment of the manufacturing sectors. During the period of 1983-2000, these regions showed impressive improvements in private manufacturing production, and the share of these regions in total manufacturing employment and value-added increased. Since the basic source of the development came from private investments, it is natural to observe decreases in the share of public sector. However, considering decreasing the number of state owned enterprises, we can state that the privatization implementation in these regions is very effective. These results maintain our statement: there are definitely no externalities in these regions. Private sector has easily substituted the state firms, in addition to create new employment opportunities. These regions also show significant increase in their shares in the total manufacturing value added.

Konya (TR52), Hatay (TR63), Zonguldak (TR81), Samsun (TR83), Trabzon (TR90) and Balıkesir (TR22) are classified as minor industrial regions. Except Konya (TR52) these are not landlocked regions. In this group, we select the regions which have a share in total employment or value added exceed 1.5 percent and not classified as hinterlands or emerging regions. We also consider the co-existences of private and public sectors before privatization.

Before privatization, except Balıkesir (TR22), the shares of state owned enterprises in the regional employment exceed about 70 percent. The share of the state firms decrease to the half of the initial ratio in these regions except Trabzon (TR90). This figures show the public sector has played crucial role in the manufacturing activities, and the shares of state owned enterprises in these regions are still higher than that of the two groups discussed above. In spite of the modest privatization in these regions, the shares of these regions in total manufacturing employment decreased after privatization. Furthermore, in Zonguldak (TR81), Samsun (TR83) and Trabzon (TR90), not only shares, but also the level of employment capacity decreased. The findings prove that the externalities created by the state owned enterprises are effective in these regions. Privatization perversely effects the development of the manufacturing sectors in the region where industrial activities are not mature enough.

Antalya (TR61), Kırıkkale (TR71), Kastamonu (TR82), Erzurum (TRA1), Ağrı (TRA2), Malatya (TRB1), Van (TRB2), Şanlıurfa (TRC2) and Mardin (TRC3) are classified

poorly industrialized regions. This group consists of the regions in which the employment and value-added share in total do not exceed 1.5 percent and public sectors dominate their industrial structures. In terms of privatization implementation, we can divide the group into two: In the Antalya (TR61), Malatya (TRB1) and Şanlıurfa (TRC2) and Mardin (TRC3) we observe considerable privatization. As we see in the minor industrial regions, privatization has negative effects in these regions. On the other hand, the privatization implementations are weak in Kastamonu (TR82), Erzurum (TRA1), Ağrı (TRA2) and Van (TRB2). Thus, except Erzurum (TRA1), we do not observe any deterioration in the employment share of these regions. These findings demonstrate how the presence of state owned enterprises are important in these poor regions.

5. DECOMPOSITION OF REGIONAL MANUFACTURING EMPLOYMENT GROWTH

In this section we present decomposition of manufacturing employment growth in the regions considering the private and the public manufacturing sectors as the component of the manufacturing activities. The manufacturing employment data of annual manufacturing surveys of TURKSTAT is also used for the calculation of shift-share analysis. Therefore, the period of the analysis ends in 2000. As in Section 4, 1983-1985 is taken as pre-privatization period of the analysis.

Shift-share analysis permits us to detect the sources of the variations in the regional growth of the economic activities. The difference between the growth rate of a region (GR) and the national growth rate (NGR) is the sum of its two components: Industry mix effect (IME) and competitive effect (CE).[15]

$$GR - NGR = IME + CE$$

or

$$GR = NGR + IME + CE$$

IME measures what would be the regional growth if each activity grows at the same rate as in the whole economy. If initially fast growing activities dominate the region one can expect that this region will benefit this advantage when composition of the economic activities remains constant. The other source of the difference between GR and NGR is the change in the composition of the economic activities in the region (CE) which can be calculate as a residual.[16]

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[15] The shift-share analysis is a simple quantitative spatial technique. The first use of the technique appear in Daniel B. Creamer, Industrial Location and National Resources (Washington, D.C.: Government Printing Office, 1943) (quoted by Hoover and Giarratani, 1999: Appendix 12-1). However, the landmark text was Regions, Resources and Economic Growth by Harvey S. Perloff, Edgar S. Dunn, Jr., Eric E. Lampard, and Richard F. Muth (The Johns Hopkins Press, 1960) (Riefler, 1984; Hoover and Giarratani, 1999: Appendix 12-1).

16 "Mix-component" and "competitive component" are identical to the concepts defined by Dunn as "net proportionality shift" and "net differential shift" respectively (Hoover and Giarratani, 1999: Appendix 12-1).

Private manufacturing employment in Turkey increased 1.65 fold from 1983-1985 to 1998-2000. However, public manufacturing employment declined to 48 percent of its initial level during the same period. Therefore, we can define the private manufacturing sector as a fast growing part of the regional economic activities. Considering the growth rate differences between private and public sectors during the privatization policy, we think that the traditional (static) shift-share analysis may provide some insights for the evaluation of this policy. The static shift-share analysis uses the data of the beginning and the end years for the analysis. However, in order to reduce the risk of errors due to annual variations in the data, we calculate average of three years as beginning and ending values. The beginning and end values respectively are the averages of 1983-1985 and 1998-2000. Private and public manufacturing employments are used as the indicators of the regional economic activities.

Decompositions of the regional employment growths are given in Table-2. Except Manisa (TR33) and Kayseri (TR72), industry mix effects are positive in the industrial zones and hinterlands. This shows that private manufacturing as the fast growing sector dominates the most of the advanced industrial regions of Turkey. Therefore, one can expect that the reducing share of the public sector through privatization should not deteriorate employment growth in these regions. Manisa (TR33) and Kayseri (TR72), on the other hand, benefited from change in the composition of the manufacturing activities in favor of private sector (competitive effect). Within these regions, only in Adana (TR62) competitive effect has negative value which suppresses its initial advantage.

In contrast to advanced industrial regions, except Kastamonu (TR82) and Van (TRB2) growth rates of manufacturing employment in poorly industrial regions are well below the national growth rate either due to high either negative value of industry mix effects (dominated by the slow growing public sector) and/or insufficient gains through competitive effects, if there is any. The findings of the shift-share analysis supports the results presented in the previous section based on the descriptive evaluation of the data.

Table 2: Decomposition of Regional Employment Growth

Industrial zones	GR Regional Growth	NGR Regional Share	IME Industry mix effect	CE Competitive effect
TR10-Istanbul	14.42	28.47	25.45	-39.50
TR31-Izmir	15.87	28.47	8.51	-21.11
TR41-(Bursa, Eskisehir, Bilecik)	96.25	28.47	8.61	59.17
TR42-(Kocaeli, Sakarya, Duzce, Bolu, Yalova)	37.78	28.47	0.46	8.86
TR51-Ankara	19.65	28.47	-25.83	17.01
TR62-(Adana, Mersin)	-11.92	28.47	22.91	-63.29
Hinterlands and emerging regions				
TR21-(Tekirdag, Edirne, Kirklareli)	166.53	28.47	25.50	112.56
TR33-(Manisa, Afyonkarahisar, Kutahya, Usak)	52.78	28.47	-5.91	30.22
TR32-(Aydin, Denizli, Mugla)	137.57	28.47	1.87	107.23
TR72-(Kayseri, Sivas, Yozgat)	57.61	28.47	-10.45	39.59
TRC1-(Gaziantep, Adiyaman, Kilis)	141.93	28.47	5.06	108.40
Minor industrial regions				
TR52-(Konya, Karaman)	11.95	28.47	-37.24	20.72
TR63-(Hatay, Kahramanmaras, Osmaniye)	-0.06	28.47	-58.99	30.46
TR81-(Zonguldak, Karabuk, Bartin)	-21.58	28.47	-64.71	14.65
TR83-(Samsun, Tokat, Corum, Amasya)	-17.44	28.47	-45.34	-0.57
TR90-(Trabzon, Ordu, Giresun, Rize, Artvin, Gumushane)	-25.03	28.47	-56.97	3.47
TR22-(Balikesir, Canakkale)	21.85	28.47	-2.60	-4.02
TR71-(Kirikkale, Aksaray, Nigde, Nevsehir, Kirsehir)	146.49	28.47	1.38	116.63
Poorly industrialized regions				
TR61-(Antalya, Isparta, Burdur)	-0.01	28.47	-16.92	-11.56
TR82-(Kastamonu, Cankiri, Sinop)	8.67	28.47	-25.50	5.70
TRA1-(Erzurum, Erzincan, Bayburt)	-38.68	28.47	-56.96	-10.19
TRA2-(Agri, Kars, Igdir, Ardahan)	-5.49	28.47	-66.55	32.59
TRB1-(Malatya, Elazig, Bingol, Tunceli)	5.23	28.47	-58.10	34.86
TRB2-(Van, Mus, Bitlis, Hakkari)	15.96	28.47	-74.20	61.68
TRC2-(Sanliurfa, Diyarbakir)	-23.42	28.47	-54.59	2.70
TRC3-(Mardin, Batman, Sirnak, Siirt)	-38.52	28.47	-54.83	-12.16

Source: Calculated from TURKSTAT data.

6. CONCLUSION

Our findings show that the effects of privatization on the manufacturing sector are not identical across regions in Turkey. In the traditional and new industrial zones, privatization has no perverse effects on the development of the manufacturing activities. On the contrary, probably due to the natural advantages, we saw that speed of industrialization in these regions accelerated. However, in the poor regions, the effects of privatization are in opposite directions: The share of these regions in total manufacturing employment and value-added decreased. One can argue that the diversification in the spatial allocation of the manufacturing activities is a natural outcome of the economic policies implemented after 1980. However, even within the poor regions, data show that the deterioration of the distribution of the manufacturing activities is closely related with the degree of privatization. Therefore, we can state that the privatization implementation has increased the regional disparities; at least, it did not contribute to the development of poor regions of Turkey.

One of the weaknesses of the study is that the analyses presented do not cover the period after 2001 crisis. The data shows that the state still has a significant share in the manufacturing sector in 2000. Although accelerated increase in privatization revenues after 2005 is mainly due to the privatization of state owned enterprises in non-manufacturing sectors, privatization in manufacturing sector has been on the agenda of the policy makers. The years 2000s also witnessed the far-reaching policies adopted to cope with the financial crisis of 2001. It is possible to expect that, in addition to privatization, the stabilization policies implemented after 2001 have deep effect on the regional distribution of the manufacturing activities in Turkey through the efforts to expand the exports. Therefore, the change in the regional distribution of the manufacturing in Turkey can be considered largely as the outcome of the mix of privatization and export expansion policies.

REFERENCES

Altinbas, Sevgi, Merih Gunes and Fatma Dogruel (2002) "Turkiye'de Bolgesel Yakinsama: Kalkinmada Oncelikli Iller Politikasi Basarili mi?" (Regional Convergence in Turkey: Are Regional Policies Successful?) presented at erc/METU International Conference in Economics VI, September 11-14, 2002,Ankara.

Bennett, John, Saul Estrin, James Maw, and Giovanni Urga (2004) "Privatization Methods and Economic Growth," CEPR Discussion Paper, No. DP4291. (www.cepr.org/pubs/dps/DP4291.asp) (15.01.2007)

Bortolotti , Bernardo and Enrico Perotti (2007) "From Government to Regulatory Governance: Privatization and the Residual Role of the State," T*he World Bank Research Observer,* 22: 53-66.

Bourguignon, François and Claudia Sepúlveda (2009) "Privatization in Development: Some Lessons from Experience," The World Bank Policy Research Working Paper 5131.

Birdsall, Nancy and John Nellis (2002) "Winners and Losers: Assessing the Distributional Impact of Privatization," Center for Global Development Working Paper No. 6. (Available at SSRN: http://ssrn.com/abstract=313861 or DOI: 10.2139/ssrn.313861)

Cecen, A. Aydin, A. Suut Dogruel, and Fatma Dogruel (1990) *Turkiye'de Ekonomik Buyume Yapisal Donusum ve Kriz*, Egemen Publication, Istanbul (in Turkish).

Djankov, Simeon and Peter Murrell (2002) "Enterprise Restructuring in Transition: A Quantitative Survey," *Journal of Economic Literature*, 40 (3): 739-792.

Dogruel, Fatma and A. Suut Dogruel (1994) "Stratégies d'entreprises et interventions étatiques: le cas de la Turquie", in Jacques Thobie and Salgur Kancal (Eds.) *Industrialisation, communication et rapports sociaux en Turquie et an Méditérranée Orientale depuis un Siècle*, l'Harmattan, Paris, 35-41.

Dogruel, Fatma and A. Suut Dogruel (2003) "Turkiye'de Bolgesel Gelir Farkliliklari ve Buyume," in Kose, A. H., Senses, F. and Yeldan, E. (Eds), *Iktisat Uzerine Yazilar I: Kuresel Duzen, Birikim, Devlet ve Siniflar - Korkut Boratav'a Armagan* Iletisim Publications, Istanbul, 287-318, 2003 (in Turkish).

Dogruel, Fatma and A. Suut Dogruel (2006) *The History of Inflation in Turkey*, Central Bank of the Republic of Turkey, Ankara and the Economic and Social History Foundation of Turkey, Istanbul.

Fatma Dogruel and A. Suut Dogruel (2010) "The Deindustrialization of Istanbul," MPRA Paper No. 27070, (Online at http://mpra.ub.uni-muenchen.de/27070/)

Dogruel, Fatma and A. Suut Dogruel (2011) "Openness, Technological Changes and Differentiation in Turkish Manufacturing Sector" in Hadi Selahi Esfehani and Gulcay Tuna (eds.), *Economic Development in the Middle East and North African Countries: Some Contemporary Issues*, Novascience Publishing House (forthcoming).

Dogruel, Fatma and A. Suut Dogruel, and Salgur Kancal (1992) "Entrepreneurs et entreprises en Turquie," in *Regions et pays Méditerranéen au debuit des Annee 90*, Tome 1, (Centre d'économie et de finances internationales, Université Aix-Marseille II, Les Milles), 67-97.

DPT (1997) Türkiye İktisat Kongresi, İstanbul, 22-27 Kasım 1948 (Turkish Economic Congress, Istanbul, November 22-27, 1948), Ankara, DPT.
(http:// ekutup.dpt.gov.tr/ekonomi/turkiye/iktisa48) (03.20.2011)

Easterly, William (2002) *The Elusive Quest for Growth*, The MIT Press, Cambridge, MA.

Erlat, Haluk (2005) "Türkiye'de Bölgesel Yakınsama Sorununa Zaman Dizini yaklaşımı" Erlat, H. (Ed.) (2005), *Bölgesel Gelişme Stratejileri ve Akdeniz Ekonomisi,* Türkiye Ekonomi Kurumu, Ankara, 251-278.

Erlat, Haluk and Pelin Ozkan (2006) "Absolute Convergence of The Regions and Provinces of Turkey," Electronic journal, Volume 8, Middle East Economic Association and Loyola University, Chicago, September.
(http:// www.luc.edu/orgs/meea/volume8/PDFS/erlat.pdf) (10.13.2007)

Faggio, Giulia (2006) "Job Destruction, Job Creation and Unemployment in Transition Countries: What can we learn?" Centre for Ec nomic Performance, London School of Economics and Political Science, 18 November 2006, ASSA, Chicago 2007.

Filiztekin, Alpay (1998) "Convergence across Industries and Provinces in Turkey" Koc University Working Paper No. 1998/08.
(http:// www.ku.edu.tr/ku/images/EAF/afiliztekin.pdf)

Fujita, Masahisa and Jacques-Francois Thisse (2002) *Economics of Agglomeration: Cities, Industrial Location and Regional Growth*, Cambridge University Press, Cambridge.

Fujita, Masahisa, 2010, "The Evolution of Spatial Economics: From Thünen to the New Economic Geography" *The Japanese Economic Review,* 61(1): 1-32.

Godoy, S. and J. Stiglitz (2006) "Growth, Initial Conditions, Law and Speed of Privatization in Transition Countries: 11 Years Later" NBER Working Paper 11992.

Hoover, Edgar M. and Frank Giarratani (1999) *An Introduction to Regional Economics.* Third Edition, Regional Research Institute, WVU.

Karaca, O. (2004) "Turkiye'de Bolgeler Arası Gelir Farkliliklari: Yakinsama Var mi" Turkish Economic Association (TEA), Discussion Paper No. 2004/7.
(http://www.tek.org.tr)

Karahasan B.Can (2010) Dynamics and Variation of Regional Firm Formation: Case of Turkey, PhD Thesis, Marmara University, Istanbul.

Kırdar, M.G. and D. S. Saracoglu (2006) "Does Internal Migration Lead to Faster Regional Convergence in Turkey? An Empirical Investigation," Turkish Economic Association (TEA), Discussion Paper No. 2006/6. (http://www.tek.org.tr)

Kikeri, Sunita and Aishetu Kolo (2005) "Privatization: Trends and Recent Developments," World Bank Policy Research Working Paper No. wps3765.

Kikeri, Sunita and John Nellis (2004) "An Assessment of Privatization," World Bank Research Observer, 19 (1): 87-118, Spring.

Krugman, Paul (1999) "The Role of Geography in Development," in Pleskovic and Stiglitz (Ed's) *Annual World Bank Conference on Development Economics 1998*, The World Bank, Washington, D.C., 89-125

Krugman, P., 1991, "Increasing Returns and Economic Geography," *Journal of Political Economy,* 99(3): 483-499.

Kuczynski, P. P. (2003) "Setting the Stage" in Kuczynski, P.P. and Williamson, J. (Eds.) *After the Washington Consensus: Restarting Growth and Reform in Latin America*, Institute for International Economics, 21-32. (http://www.iis.com)

Marshall, A., ([1890] 1920) *Principles of Economics*. Macmillan and Co., Ltd, London. [Online] available from (http://www.econlib.org/library/Marshall/marP24.html) (accessed 12 October 2008) [BOOK IV, CHAPTER X, Industrial Organization, Continued. The Concentration of Specialized Industries in Particular Localities.]

Megginson, William M., and Jeffrey M. Netter (2001) "From State to Market: A Survey of Empirical Studies on Privatization," *Journal of Economic Literature,* 39 (2): 321-389.

Nellis, John (2003) "Privatization in Latin America," Center for Global Development Working Paper, No. 31. (http://www.cgdev.org/content/publications/detail/2759) (24.01.2007)

North, Douglass C. (1994) "Economic Performance Through Time" *The American Economic Review*, 84(3): 359-368.

Rodrik, Dani (2006) "Goodbye Washington Consensus, Hello Washington Confusion? A Review of the World Bank's "Economic Growth in the 1990s: Learning from a Decade of Reform" *Journal of Economic Literature*, 44(4): 973-987.

Shirley, Mary M. and Patrick Walsh (2000) "Public versus Private Ownership: The Current State of the Debate," World Bank Policy Research Working Paper 2420. World Bank, Development Research Group, Washington, D.C.

Stiglitz, Joseph, E. (2002) *Globalization and Discontents*, W. W. Norton, New York.

Williamson, John (2004) "The Washington Consensus as Policy Prescription for Development," Senior Fellow, Institute for International Economics, A lecture in the series "Practitioners of Development" delivered at the World Bank on January 13, 2004. Institute for International Economics.

Yıldırım, Julide and Nadir Öcal (2006) "Income Inequality and Economic Convergence in Turkey," *Transition Studies Review*, 13(3): 559–568.

Zhao, Minyuan, Kathy Fogel, Randall Morck, and Bernard Yeung (2005) "Trade Liberalization and Institutional Change," Harvard Institute of Economic Research Discussion Paper Number 2098, Harvard University, Cambridge, Massachusetts. (http:// post.economics.harvard.edu/hier/2005papers/2005list.html) The Social Science Research Network Electronic Paper Collection: (http://ssrn.com/abstract=871208)

APPENDIX:

Table A1: Share of Public Sector in Manufacturing Employment by Regions (percent)

Industrial zones		1983	1984	1985	1998	1999	2000
İstanbul	TR10	9.92	9.38	8.56	2.80	3.02	2.41
İzmir	TR31	23.79	23.94	23.66	12.99	13.99	12.75
Bursa, Eskişehir, Bilecik	TR41	25.26	24.55	21.64	5.86	6.02	4.55
Kocaeli, Sakarya, Düzce, Bolu, Yalova	TR42	32.40	29.89	29.85	8.31	7.48	7.24
Ankara	TR51	55.05	54.40	50.57	12.88	13.72	12.99
Adana, Mersin	TR62	10.48	11.20	12.70	9.34	9.13	8.23
Hinterlands							
Tekirdağ, Edirne, Kırklareli	TR21	9.23	10.56	7.89	1.56	1.72	1.56
Manisa, Afyonkarahisar, Kütahya, Uşak	TR33	41.38	36.65	31.54	13.68	12.89	12.20
Emerging regions							
Aydın, Denizli, Muğla	TR32	30.41	29.95	28.16	4.20	3.93	3.42
Kayseri, Sivas, Yozgat	TR72	36.07	40.84	42.26	20.96	18.18	15.97
Gaziantep, Adıyaman, Kilis	TRC1	28.66	28.35	23.82	6.49	8.78	6.48
Minor industrial regions							
Balıkesir, Çanakkale	TR22	34.37	32.42	33.20	18.35	18.80	17.48
Konya, Karaman	TR52	69.29	62.03	58.18	22.25	24.61	23.40
Hatay, Kahramanmaraş, Osmaniye	TR63	82.79	82.45	79.82	38.73	37.25	36.89
Zonguldak, Karabük, Bartın	TR81	87.31	87.59	84.86	36.38	35.83	38.38
Samsun, Tokat, Çorum, Amasya	TR83	75.56	69.31	65.17	36.56	37.82	36.86
Trabzon, Ordu, Giresun, Rize, Artvin, Gümüşhane	TR90	81.21	80.48	78.16	57.82	57.59	54.81
Poorly industrialized regions							
Antalya, Isparta, Burdur	TR61	46.57	46.85	43.52	16.36	15.03	13.82
Kırıkkale, Aksaray, Niğde, Nevşehir, Kırşehir	TR71	23.21	35.15	30.34	52.23	52.61	55.68
Kastamonu, Çankırı, Sinop	TR82	52.30	56.46	50.40	30.31	30.81	30.44
Erzurum, Erzincan, Bayburt	TRA1	79.13	83.11	77.71	61.79	58.97	55.54
Ağrı, Kars, Iğdır, Ardahan	TRA2	89.99	88.22	87.01	75.95	75.79	75.49
Malatya, Elazığ, Bingöl, Tunceli	TRB1	81.82	80.77	80.15	46.13	45.62	43.13
Van, Muş, Bitlis, Hakkari	TRB2	93.68	97.04	93.31	87.56	85.79	85.39
Şanlıurfa, Diyarbakır	TRC2	79.27	78.99	75.66	56.97	50.44	37.37
Mardin, Batman, Şırnak, Siirt	TRC3	90.94	61.58	56.73	53.74	49.63	47.32

Source: Calculated using TURKSTAT data

Table A2: Share of Public Sector in Manufacturing Value Added by Regions (percent)

Industrial zones		1983	1984	1985	1998	1999	2000
İstanbul	TR10	19.84	16.10	16.01	4.34	5.14	5.35
İzmir	TR31	43.46	43.40	48.12	50.05	51.24	34.55
Bursa, Eskişehir, Bilecik	TR41	19.88	21.34	15.90	2.60	3.10	2.43
Kocaeli, Sakarya, Düzce, Bolu, Yalova	TR42	54.94	47.86	46.97	34.03	29.32	24.01
Ankara	TR51	54.02	54.16	57.72	13.95	12.82	8.87
Adana, Mersin	TR62	13.36	16.71	55.94	34.86	48.72	39.18
Hinterlands							
Tekirdağ, Edirne, Kırklareli	TR21	7.30	4.36	6.21	2.51	3.64	4.71
Manisa, Afyonkarahisar, Kütahya, Uşak	TR33	33.77	32.86	27.86	15.68	13.00	11.40
Emerging regions							
Aydın, Denizli, Muğla	TR32	36.20	38.85	30.59	1.09	0.12	0.82
Kayseri, Sivas, Yozgat	TR72	27.92	33.99	26.26	9.36	11.90	9.97
Gaziantep, Adıyaman, Kilis	TRC1	43.15	25.85	29.32	9.45	6.45	7.23
Minor industrial regions							
Balıkesir, Çanakkale	TR22	36.57	27.09	42.50	9.07	4.37	3.52
Konya, Karaman	TR52	64.85	43.43	53.80	25.56	23.54	29.55
Hatay, Kahramanmaraş, Osmaniye	TR63	79.22	75.10	69.12	51.89	54.51	34.10
Zonguldak, Karabük, Bartın	TR81	92.04	94.06	92.19	54.48	44.69	40.57
Samsun, Tokat, Çorum, Amasya	TR83	75.06	70.24	69.99	53.83	64.72	66.21
Trabzon, Ordu, Giresun, Rize, Artvin, Gümüşhane	TR90	63.56	56.58	48.89	38.97	27.51	39.79
Poorly industrialized regions							
Antalya, Isparta, Burdur	TR61	40.85	39.39	42.07	23.29	17.28	24.15
Kırıkkale, Aksaray, Niğde, Nevşehir, Kırşehir	TR71	26.09	25.30	38.55	89.71	91.38	90.96
Kastamonu, Çankırı, Sinop	TR82	46.27	47.59	43.27	25.08	40.57	16.11
Erzurum, Erzincan, Bayburt	TRA1	79.06	85.17	76.46	46.17	58.03	30.27
Ağrı, Kars, Iğdır, Ardahan	TRA2	93.32	0.00	58.73	28.59	45.57	51.10
Malatya, Elazığ, Bingöl, Tunceli	TRB1	93.08	92.82	93.66	74.71	68.27	83.58
Van, Muş, Bitlis, Hakkari	TRB2	95.67	95.26	93.38	73.58	86.33	78.15
Şanlıurfa, Diyarbakır	TRC2	78.35	86.40	87.83	73.76	69.30	40.67
Mardin, Batman, Şırnak, Siirt	TRC3	76.63	83.00	89.89	68.67	70.21	65.03

Source: Calculated using TURKSTAT data

Table A3: Manufacturing Employment by Regions

Industrial zones		1983	1984	1985	1998	1999	2000
İstanbul	TR10	264,137	269,353	281,969	331,638	300,871	300,533
İzmir	TR31	79,063	84,066	86,040	104,145	90,466	94,091
Bursa, Eskişehir, Bilecik	TR41	63,658	68,495	75,421	143,706	130,100	133,551
Kocaeli, Sakarya, Düzce, Bolu, Yalova	TR42	70,126	71,671	70,654	99,656	95,210	97,858
Ankara	TR51	48,284	48,558	53,709	61,826	59,299	59,013
Adana, Mersin	TR62	54,248	56,450	54,049	51,399	47,993	45,725
Hinterlands							
Tekirdağ, Edirne, Kırklareli	TR21	25,030	26,505	26,449	72,126	65,382	70,341
Manisa, Afyonkarahisar, Kütahya, Uşak	TR33	25,377	27,223	31,498	43,542	42,568	42,371
Emerging regions							
Aydın, Denizli, Muğla	TR32	19,605	20,097	20,562	47,658	45,154	50,355
Kayseri, Sivas, Yozgat	TR72	16,406	20,749	22,357	32,553	30,250	30,995
Gaziantep, Adıyaman, Kilis	TRC1	9,903	10,193	11,921	25,629	24,899	26,931
Minor industrial regions							
Balıkesir, Çanakkale	TR22	14,003	14,140	14,148	17,010	16,753	17,767
Konya, Karaman	TR52	20,960	21,308	22,654	25,539	23,832	23,307
Hatay, Kahramanmaraş, Osmaniye	TR63	21,146	21,019	21,584	22,203	21,354	20,153
Zonguldak, Karabük, Bartın	TR81	23,833	23,368	23,785	19,082	18,422	18,160
Samsun, Tokat, Çorum, Amasya	TR83	24,613	25,029	25,208	21,414	20,438	19,946
Trabzon, Ordu, Giresun, Rize, Artvin, Gümüşhane	TR90	32,490	33,629	33,182	27,014	24,256	23,178
Poorly industrialized regions							
Antalya, Isparta, Burdur	TR61	12,243	12,053	12,976	13,468	12,040	11,760
Kırıkkale, Aksaray, Niğde, Nevşehir, Kırşehir	TR71	4,499	5,280	5,785	13,392	12,706	12,265
Kastamonu, Çankırı, Sinop	TR82	4,885	5,420	6,178	6,262	5,979	5,671
Erzurum, Erzincan, Bayburt	TRA1	5,396	5,353	5,702	3,290	3,395	3,403
Ağrı, Kars, Iğdır, Ardahan	TRA2	1,348	2,393	2,271	1,983	1,863	1,836
Malatya, Elazığ, Bingöl, Tunceli	TRB1	11,738	11,595	11,592	12,743	11,987	12,020
Van, Muş, Bitlis, Hakkari	TRB2	2,011	2,464	2,601	2,620	2,730	2,855
Şanlıurfa, Diyarbakır	TRC2	3,198	3,627	3,697	2,359	2,619	3,080
Mardin, Batman, Şırnak, Siirt	TRC3	4,016	1,041	1,604	1,230	1,356	1,509

Source: Calculated using TURKSTAT data

Table A4: Regional Distribution of Total Manufacturing Employment (percent)

Industrial zones		1983	1984	1985	1998	1999	2000
İstanbul	TR10	30.63	30.23	30.40	27.56	27.06	26.63
İzmir	TR31	9.17	9.43	9.28	8.65	8.14	8.34
Bursa, Eskişehir, Bilecik	TR41	7.38	7.69	8.13	11.94	11.70	11.83
Kocaeli, Sakarya, Düzce, Bolu, Yalova	TR42	8.13	8.04	7.62	8.28	8.56	8.67
Ankara	TR51	5.60	5.45	5.79	5.14	5.33	5.23
Adana, Mersin	TR62	6.29	6.34	5.83	4.27	4.32	4.05
Hinterlands							
Tekirdağ, Edirne, Kırklareli	TR21	2.90	2.97	2.85	5.99	5.88	6.23
Manisa, Afyonkarahisar, Kütahya, Uşak	TR33	2.94	3.06	3.40	3.62	3.83	3.75
Emerging regions							
Aydın, Denizli, Muğla	TR32	2.27	2.26	2.22	3.96	4.06	4.46
Kayseri, Sivas, Yozgat	TR72	1.90	2.33	2.41	2.70	2.72	2.75
Gaziantep, Adıyaman, Kilis	TRC1	1.15	1.14	1.29	2.13	2.24	2.39
Minor industrial regions							
Balıkesir, Çanakkale	TR22	1.62	1.59	1.53	1.41	1.51	1.57
Konya, Karaman	TR52	2.43	2.39	2.44	2.12	2.14	2.06
Hatay, Kahramanmaraş, Osmaniye	TR63	2.45	2.36	2.33	1.84	1.92	1.79
Zonguldak, Karabük, Bartın	TR81	2.76	2.62	2.56	1.59	1.66	1.61
Samsun, Tokat, Çorum, Amasya	TR83	2.85	2.81	2.72	1.78	1.84	1.77
Trabzon, Ordu, Giresun, Rize, Artvin, Gümüşhane	TR90	3.77	3.77	3.58	2.24	2.18	2.05
Poorly industrialized regions							
Antalya, Isparta, Burdur	TR61	1.42	1.35	1.40	1.12	1.08	1.04
Kırıkkale, Aksaray, Niğde, Nevşehir, Kırşehir	TR71	0.52	0.59	0.62	1.11	1.14	1.09
Kastamonu, Çankırı, Sinop	TR82	0.57	0.61	0.67	0.52	0.54	0.50
Erzurum, Erzincan, Bayburt	TRA1	0.63	0.60	0.61	0.27	0.31	0.30
Ağrı, Kars, Iğdır, Ardahan	TRA2	0.16	0.27	0.24	0.16	0.17	0.16
Malatya, Elazığ, Bingöl, Tunceli	TRB1	1.36	1.30	1.25	1.06	1.08	1.06
Van, Muş, Bitlis, Hakkari	TRB2	0.23	0.28	0.28	0.22	0.25	0.25
Şanlıurfa, Diyarbakır	TRC2	0.37	0.41	0.40	0.20	0.24	0.27
Mardin, Batman, Şırnak, Siirt	TRC3	0.47	0.12	0.17	0.10	0.12	0.13

Source: Calculated using TURKSTAT data

Table A5: Regional Distribution of Total Manufacturing Value Added (percent)

Industrial zones		1983	1984	1985	1998	1999	2000
İstanbul	TR10	28.17	29.78	29.62	24.80	24.25	23.80
İzmir	TR31	11.88	11.53	11.29	11.97	12.14	13.96
Bursa, Eskişehir, Bilecik	TR41	5.90	6.18	7.49	8.86	9.01	9.41
Kocaeli, Sakarya, Düzce, Bolu, Yalova	TR42	19.28	16.92	16.34	17.79	16.09	15.31
Ankara	TR51	3.82	3.45	4.51	4.41	4.56	4.54
Adana, Mersin	TR62	11.02	9.82	9.21	5.56	7.02	5.81
Hinterlands							
Tekirdağ, Edirne, Kırklareli	TR21	2.48	2.52	2.25	5.50	5.09	5.72
Manisa, Afyonkarahisar, Kütahya, Uşak	TR33	1.51	1.74	2.29	2.90	3.01	2.89
Emerging regions							
Aydın, Denizli, Muğla	TR32	1.34	1.84	1.43	1.87	1.87	2.29
Kayseri, Sivas, Yozgat	TR72	1.29	1.29	1.23	1.85	1.79	1.78
Gaziantep, Adıyaman, Kilis	TRC1	0.59	0.66	0.66	1.33	0.98	1.59
Minor industrial regions							
Balıkesir, Çanakkale	TR22	1.41	1.50	1.65	1.60	1.62	1.76
Konya, Karaman	TR52	1.41	1.71	1.17	1.40	1.25	1.28
Hatay, Kahramanmaraş, Osmaniye	TR63	0.82	0.85	0.68	1.57	1.75	1.14
Zonguldak, Karabük, Bartın	TR81	3.23	4.01	2.91	1.15	0.86	0.95
Samsun, Tokat, Çorum, Amasya	TR83	0.95	1.29	1.11	1.26	1.54	1.39
Trabzon, Ordu, Giresun, Rize, Artvin, Gümüşhane	TR90	1.25	1.18	1.41	1.00	1.05	1.08
Poorly industrialized regions							
Antalya, Isparta, Burdur	TR61	0.83	1.14	0.94	0.65	0.69	0.77
Kırıkkale, Aksaray, Niğde, Nevşehir, Kırşehir	TR71	0.26	0.30	0.34	2.84	3.67	2.88
Kastamonu, Çankırı, Sinop	TR82	0.21	0.18	0.25	0.28	0.21	0.30
Erzurum, Erzincan, Bayburt	TRA1	0.35	0.36	0.31	0.12	0.15	0.15
Ağrı, Kars, Iğdır, Ardahan	TRA2	0.04	0.00	0.02	0.05	0.05	0.06
Malatya, Elazığ, Bingöl, Tunceli	TRB1	1.27	1.49	1.88	0.73	0.71	0.63
Van, Muş, Bitlis, Hakkari	TRB2	0.09	0.03	0.13	0.03	0.13	0.11
Şanlıurfa, Diyarbakır	TRC2	0.11	0.15	0.28	0.19	0.18	0.19
Mardin, Batman, Şırnak, Siirt	TRC3	0.52	0.10	0.59	0.28	0.32	0.21

Source: Calculated using TURKSTAT data

Table A6: Number of State Firms by Regions

Industrial zones		1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
İstanbul	TR10	28	31	28	26	24	24	24	23	16	17	16	15	15	15	12	11	11	10	16	16	13
İzmir	TR31	15	12	14	13	9	10	10	10	7	7	7	7	7	7	7	7	7	7	11	10	8
Bursa, Eskişehir, Bilecik	TR41	16	14	15	13	12	13	13	14	12	12	11	11	11	10	10	9	9	9	12	8	8
Kocaeli, Sakarya, Düzce, Bolu, Yalova	TR42	24	23	23	22	21	21	21	22	14	15	14	15	14	13	12	11	11	11	15	11	8
Ankara	TR51	23	25	24	26	23	25	24	24	18	16	15	15	14	13	15	14	13	12	16	16	15
Adana, Mersin	TR62	14	13	12	12	10	12	13	12	8	8	8	8	7	7	7	5	5	5	8	9	7
Hinterlands																						
Tekirdağ, Edirne, Kırklareli	TR21	9	9	8	7	8	8	8	8	8	8	8	7	8	8	7	6	5	4	4	4	3
Manisa, Afyonkarahisar, Kütahya, Uşak	TR33	15	15	18	17	14	13	14	14	10	9	9	9	12	13	13	13	11	11	13	13	13
Emerging regions																						
Aydın, Denizli, Muğla	TR32	9	10	10	12	9	9	10	11	10	9	9	9	13	11	8	8	9	7	10	12	9
Kayseri, Sivas, Yozgat	TR72	12	10	10	9	7	9	9	9	9	10	9	10	11	10	10	10	10	9	9	8	7
Gaziantep, Adıyaman, Kilis	TRC1	8	5	8	9	8	9	9	9	9	9	9	9	9	7	8	7	5	6	6	7	5
Minor industrial regions																						
Balıkesir, Çanakkale	TR22	12	13	10	9	8	9	9	9	7	6	6	6	6	6	6	5	4	5	7	7	7
Konya, Karaman	TR52	9	9	9	9	8	8	7	8	9	10	10	10	9	9	9	8	8	8	8	8	7
Hatay, Kahramanmaraş, Osmaniye	TR63	5	6	6	5	5	4	5	4	4	4	4	4	4	2	2	2	2	1	2	1	2
Zonguldak, Karabük, Bartın	TR81	12	12	10	9	7	7	7	7	6	6	6	6	6	5	5	4	3	0	1	3	1
Samsun, Tokat, Çorum, Amasya	TR83	16	16	17	18	15	16	17	17	16	17	17	17	18	15	15	11	9	9	10	9	11
Trabzon, Ordu, Giresun, Rize, Artvin, Gümüşhane	TR90	55	55	55	55	58	60	59	59	59	57	58	59	59	58	59	59	56	55	53	53	53
Poorly industrialized regions																						
Antalya, Isparta, Burdur	TR61	15	12	13	14	12	11	11	11	9	9	9	9	11	10	10	9	7	7	7	8	6
Kırıkkale, Aksaray, Niğde, Nevşehir, Kırşehir	TR71	7	7	7	7	6	6	6	7	8	9	8	8	11	11	9	6	6	4	7	7	7
Kastamonu, Çankırı, Sinop	TR82	10	11	11	12	10	10	13	13	12	12	11	11	13	13	10	6	5	5	5	5	4
Erzurum, Erzincan, Bayburt	TRA1	9	9	10	9	9	9	9	8	8	9	9	10	10	9	7	3	3	4	5	5	4
Ağrı, Kars, Iğdır, Ardahan	TRA2	6	6	6	6	7	6	6	7	7	7	6	6	7	6	7	6	4	3	3	3	3
Malatya, Elazığ, Bingöl, Tunceli	TRB1	11	12	12	12	12	13	13	14	13	13	13	13	15	14	14	11	11	10	10	9	9
Van, Muş, Bitlis, Hakkari	TRB2	11	11	8	9	10	11	12	13	14	16	15	15	16	16	11	11	9	7	7	7	8
Şanlıurfa, Diyarbakır	TRC2	9	10	11	10	12	11	13	13	13	14	14	15	15	15	13	12	9	8	7	7	6
Mardin, Batman, Şırnak, Siirt	TRC3	4	3	3	3	3	4	5	5	4	4	4	4	4	5	2	2	2	2	2	1	2
	Total	364	359	358	353	327	338	347	351	310	313	305	308	325	308	288	256	234	219	254	247	226

Source: Calculated using TURKSTAT data