

**CAN FDI BE A PANACEA FOR UNEMPLOYMENT?:
THE TURKISH CASE**

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Abstract

Foreign Direct Investment (FDI) is an important pillar of the global economy and continues to be the engine of growth. Despite the rising integration into the global economy, FDI performance of Turkey remained lower than many other developing countries until the early 2000s. Since then, Turkey has attracted record levels of FDI inflows in her history. Accompanying these inflows, the country also achieved high rates of growth. However, high unemployment rates continued to be a major problem. This paper seeks to explain the role of FDI inflows in job creation in Turkey at a sectoral level for the period of 2000 and 2007. We use dynamic panel data analysis and find a negative relationship between FDI inflows and employment. M&As, as the dominant mode of foreign entry in Turkey, might be a reason for this negative employment effect. Moreover, the shift of foreign investment from low-tech to medium- and high-tech industries in manufacturing could lead to the detrimental effect on employment.

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1. Introduction

Since the mid-1980s, the primary mechanism for integration of national economies into the global economy has shifted from trade to FDI as evidenced by faster growth of FDI than trade (Dicken 2007). Meanwhile, the competition among developing countries has intensified as FDI offers a form of finance that does not cause indebtedness. FDI is also desirable for its potential to create jobs in host economies. Suffering from high and persistent rates of unemployment, Turkey also has redesigned her FDI policy in the early 2000s by further liberalizing the terms and conditions for FDI inflows and creating a more favourable investment climate in the country.

In retrospect, Turkey attracted only a very low level of FDI until the early 2000s. Following the severe financial and economic crisis in 2001, thanks to the economic reforms in the country and excessive liquidity in global financial markets, there has been a sharp increase in the FDI inflows. However, although Turkey experienced high rates of growth during the 2000s and this growth process has been accompanied by large amounts of FDI inflows, the high rates of unemployment in the country has persisted, if not increased. At this point, how the FDI inflows affected the unemployment problem in Turkey remains a question to be explored.

Similar to other developing countries, if Turkey wants to achieve the expected positive outcomes from FDI inflows which are critical for enhancing economic growth and development, the effects of past FDI inflows have to be scrutinized. Only in this way, can Turkey redesign a suitable FDI policy and continue to create necessary preconditions for a higher share from global FDI. Works to this end have gained further importance together with the fact that global FDI flows are likely to decrease in the near future. Furthermore, for a thorough analysis of the effects of FDI inflows, there is a need for a detailed sectoral investigation as the effects can vary from one sector to another depending on sector-specific dynamics.

In this paper, we aim to analyze the relationship between FDI inflows and employment in Turkey at the sectoral level for the period of 2000-2007. The study will show whether or not the surge in FDI flows into Turkey has contributed to job creation. This paper consists of the following sections: the first section will discuss the FDI inflows to Turkey with a historical perspective. Secondly, we will review the literature and present our research questions and hypotheses. The next section will be devoted to the discussion of the

methodology and data analysis. In the final section, we will present the results and draw some policy conclusions.

2. FDI Inflows to Turkey in Retrospect

Before 1980, during the import substitution period, Turkey's share in world FDI remained less than 1%. In the post-1980 period when Turkey has been increasingly integrated into the global economy through the trade and financial liberalization, the FDI performance of the Turkish economy continued to be low. Capital inflows mainly took the form of portfolio flows, which were attracted via a policy of high interest rate cum overvalued Turkish Lira rather than FDI. There were several reasons behind the low FDI performance. First of all, foreign-owned firms continued to be subject to some special authorizations and sectoral limitations in the post-1980 period. Also, Ok (2004), examines the driving factors of FDI in Turkey with a survey data and, not surprisingly, finds that political and macroeconomic instability in Turkey had been considered by foreign investors as the most important barrier to FDI. Furthermore, a weak and unpredictable judicial system, heavy taxation, corruption, and competition from the informal economy are noted as deterring foreign investment (ERF 2005, 77).¹ The progressive liberalization of FDI regime in the 1980s and 1990s did not neutralize these disincentives (Erdilek 2003, 83). As Figure 1 displays, FDI inflows continued to be very low even during the 1990s when global FDI continued to rise up.² As a result, despite the rising openness to world trade since 1980 and the customs union with the EU in 1996, "Turkey's integration with the world economy through FDI has lagged relative to other developing countries" (Erdilek 2003, 80).

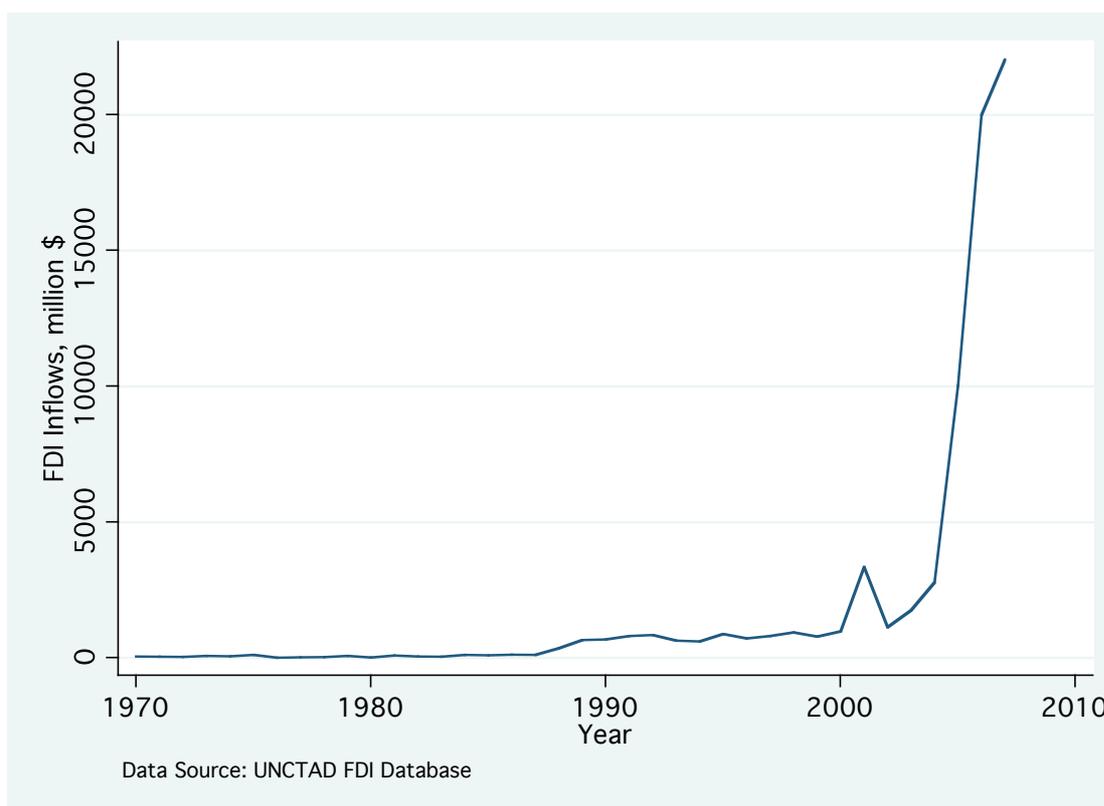
In 2001, the GSM tender led to an upsurge in the FDI received by Turkey. However, the severe financial crisis this year caused FDI inflows to return to low levels again. Yet, between 2005 and 2007 Turkey recorded the highest volumes of FDI inflows in her history with a three consecutive year of growth. In spite of the fall in the incoming FDI in 2008 after the peak in 2007, it was still one of the highest inflows to Turkey. By attracting \$22.03 billion

¹ See also Erdilek (2003) and Yılmaz (2007) for the reasons of the low FDI inflows in the 1980s and 1990s .

² In 2000, the share of Turkey in global FDI was still 0.08%. As well, the country's share in FDI flows to developing countries was 0.41% (Güven 2008, 84). However, in the West Asia region in 2007, with FDI inflows amounting to \$ 22 billion dollars, Turkey became the second top FDI receiving country following Saudi Arabia (UNCTAD 2009, xviii).

FDI in 2007, Turkey ranked among the five developing countries and the top 16 countries in the world (Turkish Treasury 2008, 2). Lying at the background of this success are the restructuring in the Turkish economy after the 2001 financial crisis, the economic stability with falling inflation and interest rates coupled with the global excess liquidity which helped a lot to attract historic amounts of FDI flows to Turkey. Adding to that the introduction of the new FDI Act in 2003 (Law No. 4875). With this legislative change, investment climate has been made more favourable for the entries of foreign firms. The Act guarantees nondiscriminatory treatment, with equal rights for foreign and national investors. “According to the law, a company can be 100 percent foreign-owned in almost all sectors of the economy” (ERF 2005, 78) without any performance requirements.³ Last but not the least, start of the membership talks with the EU in 2004 also contributed to the surge in FDI inflows (Yılmaz, 2007).

Figure 1: FDI inflows to Turkey, 1970-2007

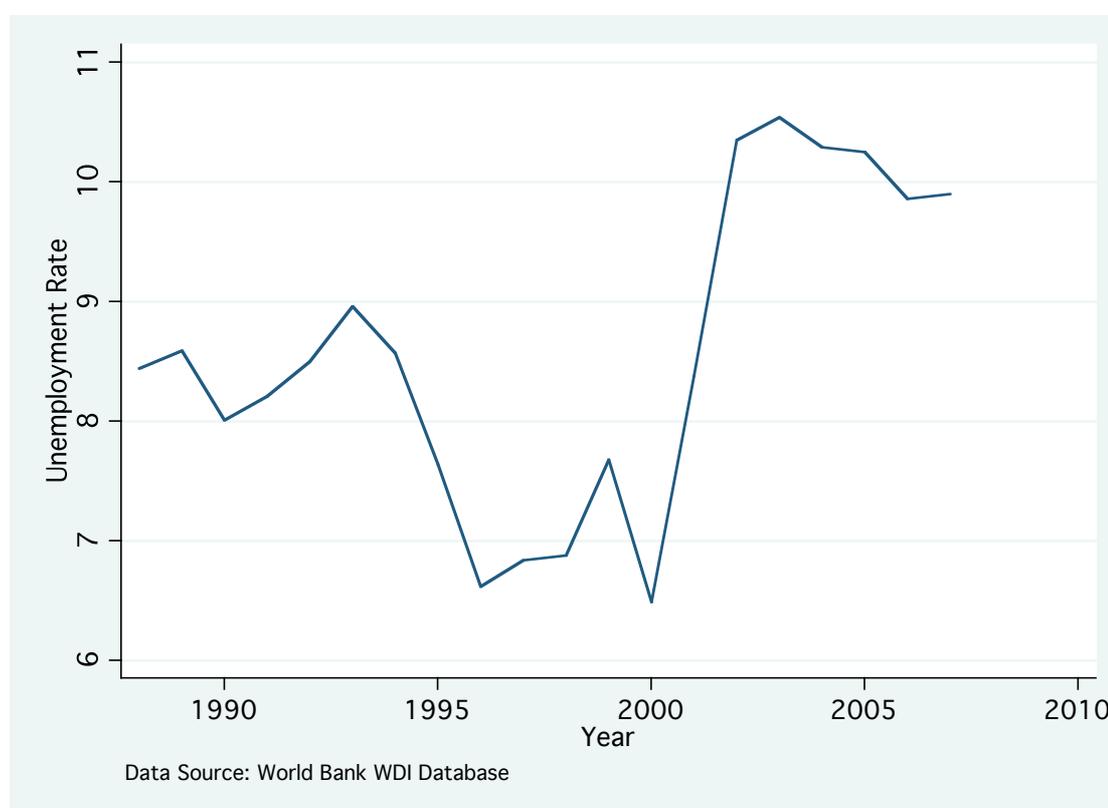


³ The FDI Act removed the screening and pre-approval procedures for FDI projects, redesigned the company registration process so that it was equal for domestic and foreign firms, facilitated the hiring of foreign employees, included FDI firms in the definition of “domestic tenderer” in public procurement, granted foreign investors full convertibility in their transfers of capital and earnings and authorized foreign persons and companies to acquire real estate in Turkey (ERF 2005, 77; Erdilek 2003, 93).

However, it should also be noted that although Turkey attracted the record levels of inflows in these years, relative to the worldwide inflows, they remained still very low and well below its potential level (Sayek, 2007).

Accompanying the FDI inflows, the Turkish economy achieved an average annual growth rate of 6,8 % between 2002 and 2007. However, despite the high growth rates and FDI inflows, as can be seen from Figure 2, the high rates of unemployment in the country has persisted.

Figure 2 : Unemployment in Turkey, 1988-2007



There might be several reasons behind this dismal outcome, including labor market rigidity and high unit labor cost as widely noted in the world literature. For example, Leibrecht and Scharler (2009), in their study on transition economies, find that employment-creation capacity of FDI was not affected by the level of employment protection legislation but relative unit labor costs. However, the high unemployment rates in Turkey can be attributed to reasons other than the wage level and labour market rigidity: the growth in Turkey in the 2000s was basically achieved due to the rise in labour productivity and the fall

in unit labour costs⁴ as well as the increase in the import of raw materials and semi-finished goods. Moreover, the decline in agricultural employment accompanying the neo-liberal restructuring in this sector has contributed to the unemployment problem. At this point, the question that how FDI inflows affected unemployment in Turkey needs to be answered.

Figure 3: Number of Companies with Foreign Capital by Year according to Mode of Establishment, 2000-2008

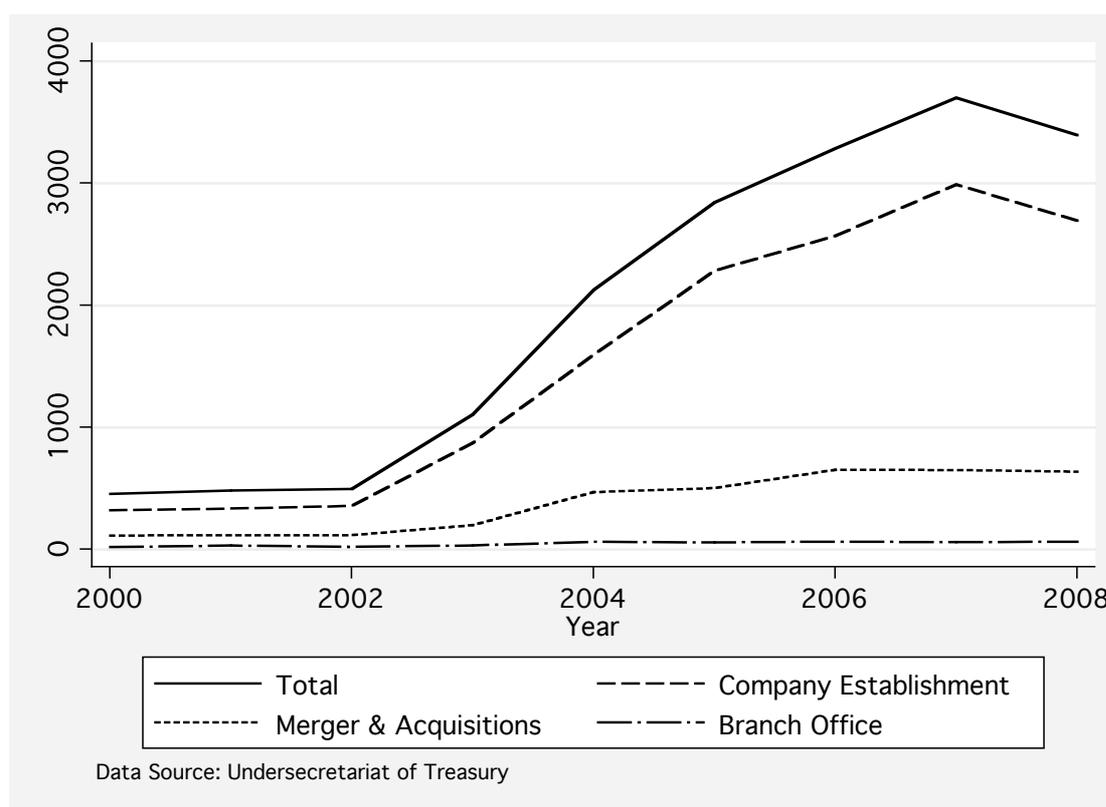


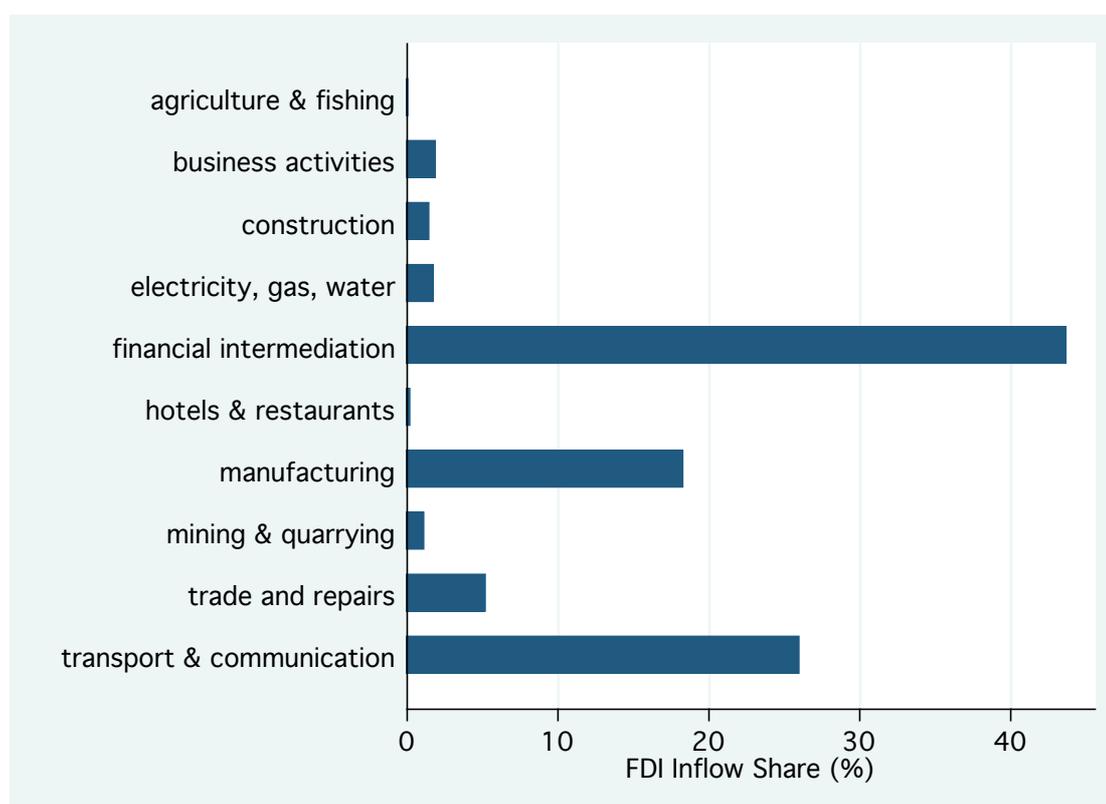
Figure 3 displays the modes of entry of foreign capital in Turkey between 2000 and 2008. It shows that in terms of number of establishment, the dominant form of foreign investment in Turkey was greenfield investment. The sum of company establishment and branch offices, as an indicator of greenfield investment, constituted around 80% of the total companies with foreign capital. Greenfield investment is followed by the form of participation (merger&acquisition) in the existing firms (Turkish Treasury 2008, 18).⁵ However, as Yılmaz

⁴ Yılmaz (2007) notes that unit labour costs have decreased in Turkish Lira terms, but increased in dollar terms because of the overvaluation of Turkish Lira during the period considered.

⁵ There were 22.092 foreign capital firms in Turkey as of 2008.

(2007, 10-11) points out, when the average sizes of capital invested are considered, M&As become the dominant form. It was observed that between 2003 and 2006, almost 95% of the new foreign investment in Turkey were in small-scale firms. That is the high number of newly established firms and branches did not translate into high FDI inflows in monetary terms. As a matter of fact, Turkey has not been successful in attracting greenfield investment compared to Czech Republic, Hungary and Poland that have become the three most important host countries among the transition economies in the 1990s and 2000s (Yılmaz 2007, 10). The dominance of privatization and M&As can be attributed to low level of education, unskilled labour force, low R&D expenditures and, high taxes (Yılmaz 2007, 12).

Figure 4: FDI Shares of Industries, 2000-2007⁶



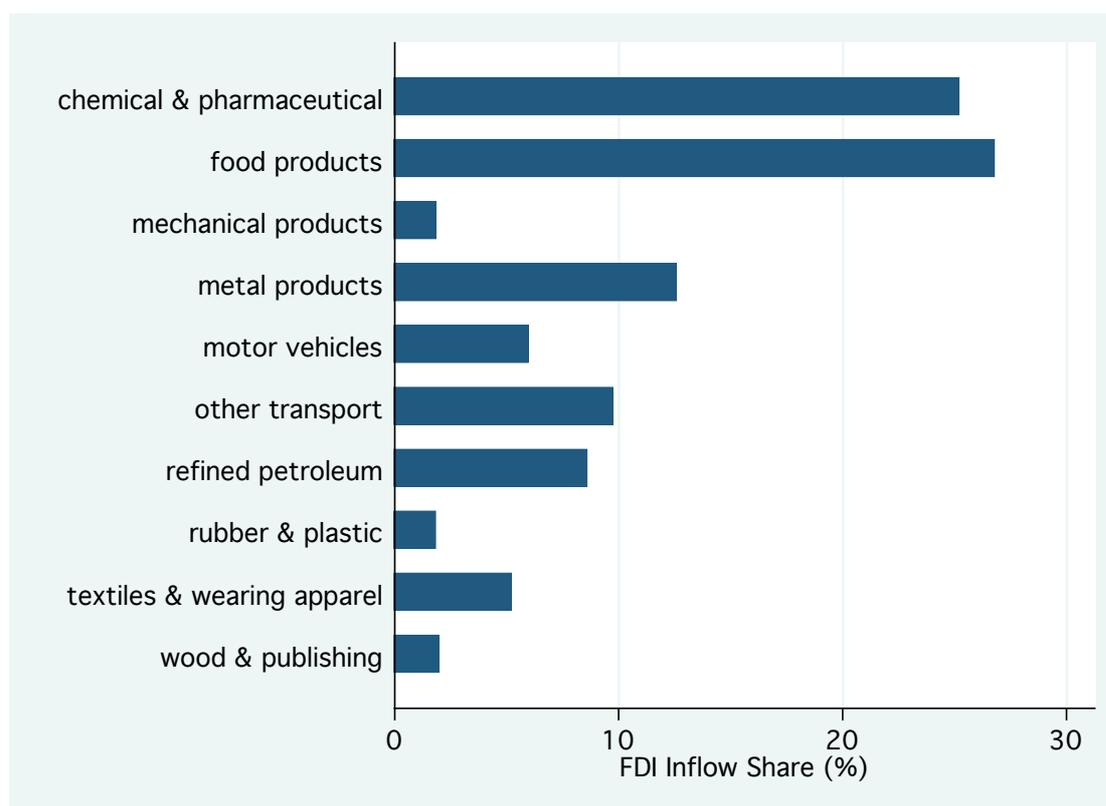
Coming to the sectoral distribution of foreign investment in Turkey, in the post-1980 period, foreign capital mostly preferred to enter manufacturing and services. Agriculture and

⁶ See Appendix Table A1 for the FDI shares of these industries.

mining have been historically the less attractive sectors for foreign investment in Turkey (Güven 2008).

During the late 1990s and early 2000s manufacturing became the top FDI receiving sector, with the share of around 52% of total FDI inflows (Sayek 2007, 108). However, as can be seen from Figure 4, since the early 2000s, services have attracted highest FDI in parallel with the world trends. Financial services in Turkey attracted the most-service related FDI in 2007,⁷ followed by transportation and communications. Trade also attracted investors in Turkey, as demonstrated by the recent acquisition of the supermarket chains *Migros* by BC Partners (United Kingdom) (UNCTAD 2009, 57). Turkey also received FDI inflows to the mining industry amounting to \$341 million in 2007 following the Mining Law of 2004 that eased privatizations and foreign ownership (UNCTAD 2009, 56).

Figure 5: FDI Shares of Sectors in Manufacturing, 2000-2007⁸



Data Source: OECD

⁷ Such as the partial or full acquisitions of Akbank, Garanti Bank, Oyakbank and Finansbank.

⁸ See Appendix Table A2 for the FDI shares of these sectors.

FDI in construction, on the other hand, has been lower than foreign real estate purchases in Turkey. Until the regulatory changes in 2003 foreigners were not allowed to invest in real estate. As the new FDI Act allows foreigners to acquire property in Turkey, FDI inflows in real estate increased sharply (Sayek 2007, 110).

During the period between 2000 and 2007, manufacturing was the third sector that received highest FDI following financial services and transportation & communications. Within manufacturing, as Figure 5 shows, food products, chemical & pharmaceutical and, metal products were the top three FDI receiving sectors. In 2007, the manufacturing sector accounted for about 22 % of total FDI inflows.

3. Literature Review

There is a wide literature on the motives of FDI flows along with the effects of these flows on the host and home economies. The effects on the host economies have been considered on different grounds. These works mainly emphasize the effects on economic growth, wage level, technology spillover, foreign trade and employment in the host economy (see Floyd 2003, Dicken 2007). In addition to this, the effects of FDI outflows on foreign trade and employment levels of the home economies have been extensively studied.

In the literature, employment effects of FDI in the investment receiving country has been contentious. The debates signal that those effects can change from one country to another depending on the country-specific features and the form of investment. It has been generally accepted that positive employment effects would be higher if the investment takes the form of greenfield investment. On the other hand, if foreign capital comes via M&As and buys privatized enterprises foreign investment will have a limited, even negative effect on the employment level (see Vergil and Ayaş 2009, 92).

In a recent study by Karlsson et al. (2009) on Chinese manufacturing industry, FDI is found to be positively affecting the employment growth in foreign-owned firms largely due to their firm characteristics and high survival rates. Similar effects were recorded in privately-owned domestic firms as well, possibly due to spillovers. The positive impact of FDI is also evident in the Irish economy. She attracted large FDI inflows into the export-oriented-foreign firms in the 1990s and 63% of manufacturing employment was provided by these multinational corporations (MNCs) (Barry and Bradley, 1997). Another country where

positive employment effect of FDI has been recorded is Hungary. The country attracted large FDI inflows in the same period. Fazekas and Ozsvald (2004) find that more than 80% of net job creation of the corporate sector between 1993-2000 can be attributed to foreign companies. However, the authors also point out that between 2000 and 2002, employment in foreign firms decreased with the shift of FDI from low-value added sectors to medium-tech sectors.

The motives behind FDI inflows is also worth to mention. In the Malaysian case, according to Rajasekeran (2001), MNCs have been attracted by no union policy, tax heavens and other incentives since the 1970s and as a result, foreign investors have become dominant in crucial sectors such as electronics. In this descriptive work it is claimed that even though FDI inflows mainly from Japan, Taiwan, South Korea and Singapore have helped to create jobs in Malaysia, this process has been accompanied by lower wages and less job security. However, Pei and Esch (2004) asserts that in general, FDI inflows to developing countries have had positive effects on economic growth, job creation, and living standards of workers. But the authors also recognize that there is a diversion of opinion in the academic field as some negatively affected country cases have been identified. As a result, their work remains to be assertive but not empirically well- supported.

On the other hand, Axarloglou and Pournarakis (2007) analyse the effects of FDI inflows on local employment in manufacturing across a sample of states in the United States for the period of 1974-1994. They find that the effects change from one industry to another. While FDI inflows have positive employment effects for a subgroup of industries such as printing & publishing and transportation equipment & instruments, negative effects have been found for another subgroup of industries such as leather&stone, clay and glass. Onaran (2008) also finds the employment effect of FDI inflows to manufacturing industry in Central and Eastern European countries as insignificant, if not negative.

Despite the relevance of the issue for Turkey, there has been a limited number of researches hitherto. Moreover, the findings of these few studies are contradictory. Among these studies, Karagöz (2007) finds that there is no causality between FDI inflows and employment in Turkey for the period of 1970-2005. There are some shortcomings in his analysis, however. First of all the study covers a long period of time in which there were major structural breaks in the amounts of FDI inflows. Furthermore, he uses aggregated data disregarding any sectoral consideration. The descriptive study by Koldaş and Şenses (2005),

on the other hand, compares the performance of FDI firms on some aggregates including employment, wages, labor productivity and share of wages in value added in comparison with domestic firms during 1992-2001 period. They find that FDI firms fare slightly better in terms of employment creation than domestic firms. However, they also note the disappointing performance of FDI in comparison with the expectations it raised in the first place.⁹

As well, Vergil and Ayaş (2009) examine the relationship between employment and FDI inflows by using panel data analysis which includes four main sectors (manufacturing, financial services, wholesale and retailing, and mining) for the period of 1992-2006. They conclude that FDI inflows negatively affected employment in Turkey as the majority of FDI inflows took the form of M&As rather than greenfield investment. However, this study also suffers from the same drawbacks as Karagöz (2007).

As can be seen, it is not possible to draw any concrete conclusion from the the existing literature on the relationship between FDI and employment in Turkey. The main reason for the inconsistent findings can be attributed to the different time periods and sectors that are covered by these works. For a solid analysis of FDI inflows on Turkey's employment level there is a need for the consideration of the structural breaks in the history of the Turkish economy. For example, the period before 2000 should be analysed separately from the post-2000 period as FDI inflows remained uncomparably low before 2000 (see Figure 1). Further clarification can be achieved by extending the analysis into a larger number of sectors than covered by the few studies mentioned above. In this way, if foreign investments have led to varying employment outcomes among the (sub-)sectors the analysis can pinpoint those sectoral differentiations.

4. Data and Methodology

4.1 Data

In this study, we analyse sectoral employment effects of FDI inflows to the Turkish economy between 2000 and 2007. The analysis covers 10 sectors (ISIC Rev.3: A to K),

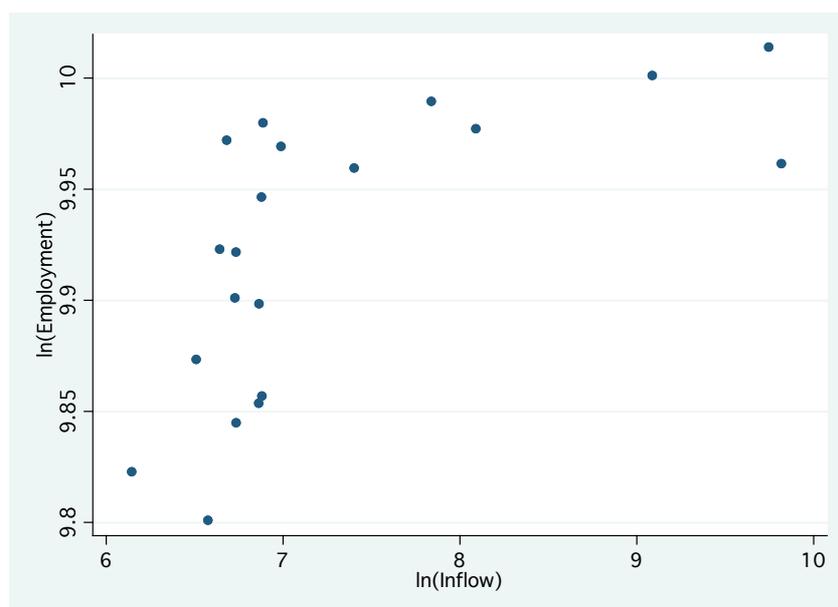
⁹ Yılmaz (2007, 18) notes that among the 500 largest manufacturing firms in Turkey, average number of employment in foreign capital firms are three times higher than the average number of employment in the domestic firms in the period between 1990 and 1996.

including manufacturing sector subdivided into 10 sectors (ISIC Rev.3 15, 17+18, 20+21+22, 23, 24, 25, 28, 29, 34, 35), totaling 19 sectors^{10,11}. Therefore, this study provides the most comprehensive analysis among the existing works on the relationship between FDI and employment in Turkey in terms of the numbers of sectors covered.

The non-availability of sectoral data forced us to restrict the research to the post-2000 period. This time period is consistent with the fact that FDI inflows to Turkey in the post-2000 period have considerably changed both qualitatively and quantitatively. As mentioned above, due to favourable legislative and institutional changes in Turkey and excess liquidity in the international financial markets, there has been a surge in the FDI flows to Turkey in the post-2000 period that are incomparably higher than the previous periods (see Figure 1). Therefore, the analysis will be able to clarify the effects on job creation accompanying the surge in FDI inflows by focusing on the post-2000 period. With the large number of sectors included in the analysis, it will be possible to identify the link between FDI and employment more clearly.

We employ dynamic panel data analysis and in the most comprehensive model utilized, employment is considered as a function of lagged employment, FDI inflows (current and lagged values) and real wages, including year dummies.

Figure 6: Scatter Plot of FDI and Employment



¹⁰ See Appendix Table A.3 for the description of these sectors and sub-sectors.

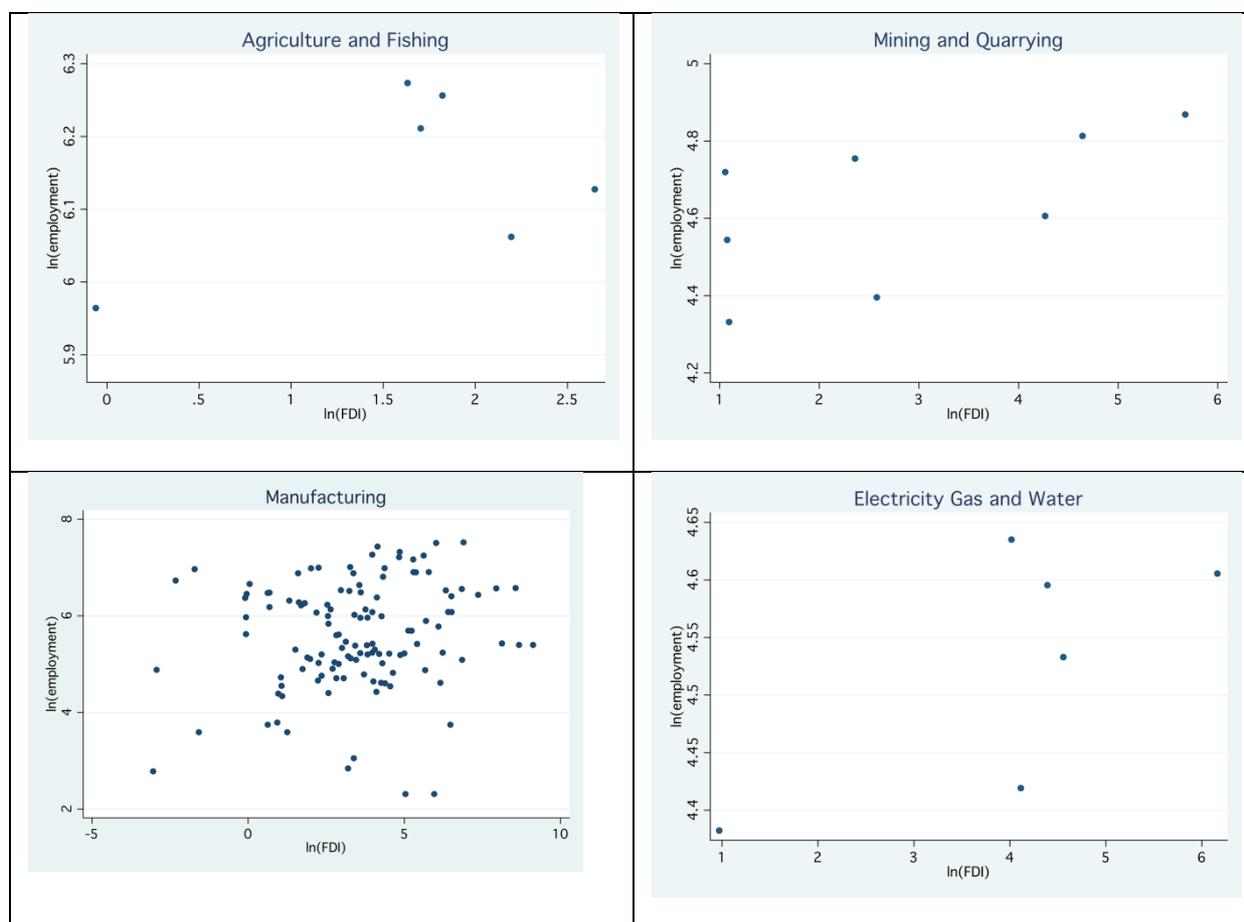
¹¹ Sector 30 is excluded due to unavailability of data on employment. Similarly, sectors 33 and 34 are excluded since there were no inflows to these sectors until 2007.

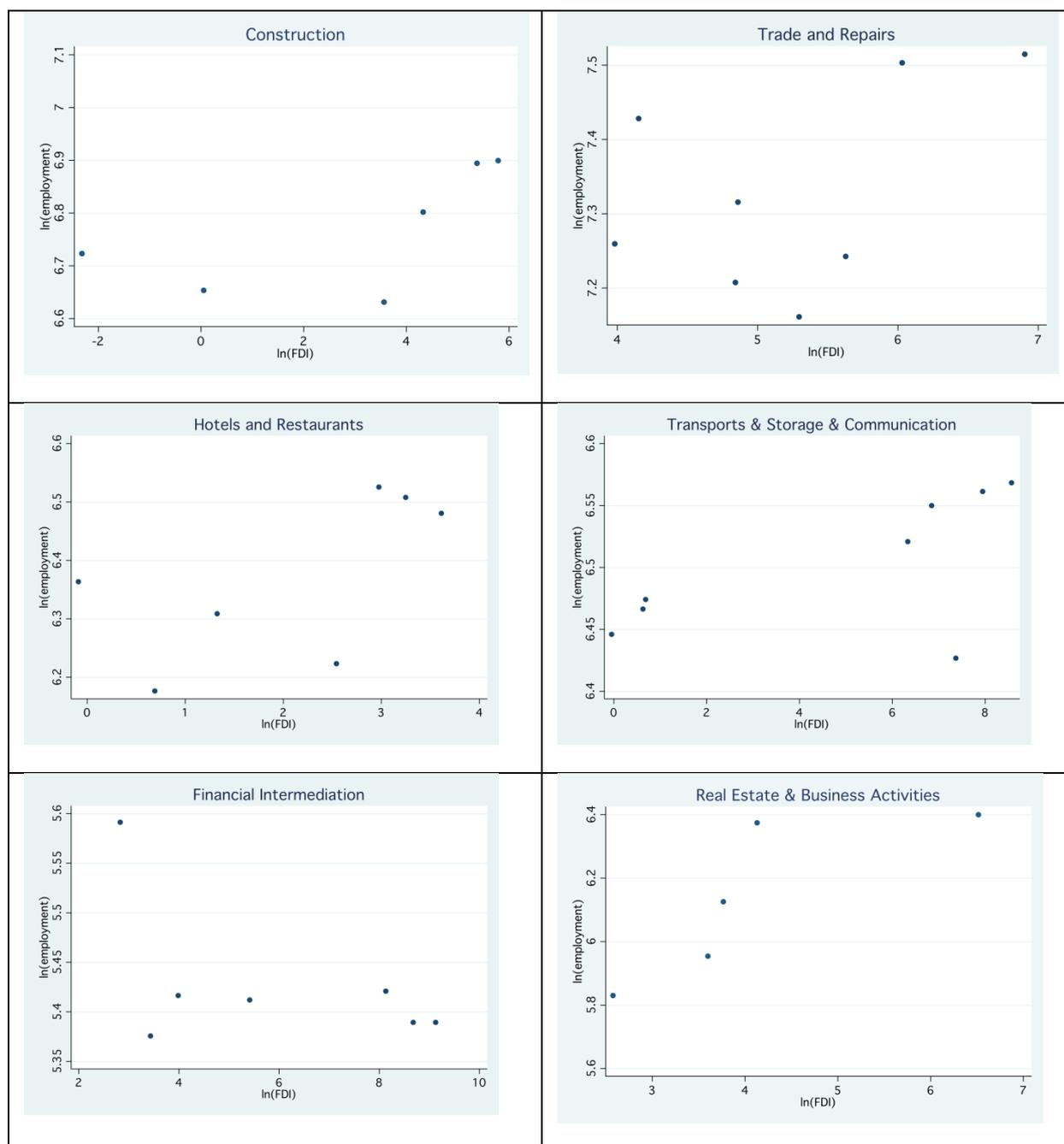
The source of the employment data is ILO's LABORSTA database. The real wage series are obtained from TURKSTAT. The FDI data are taken from OECD.Stat database.

Figure 6 shows the scatter diagram of logarithms of real FDI inflows versus employment level. At the aggregate level, there seems to be a positive relationship between foreign investment and job creation in Turkey.

The panel of figures below presents the relationship between FDI inflows and employment at the sectoral level.

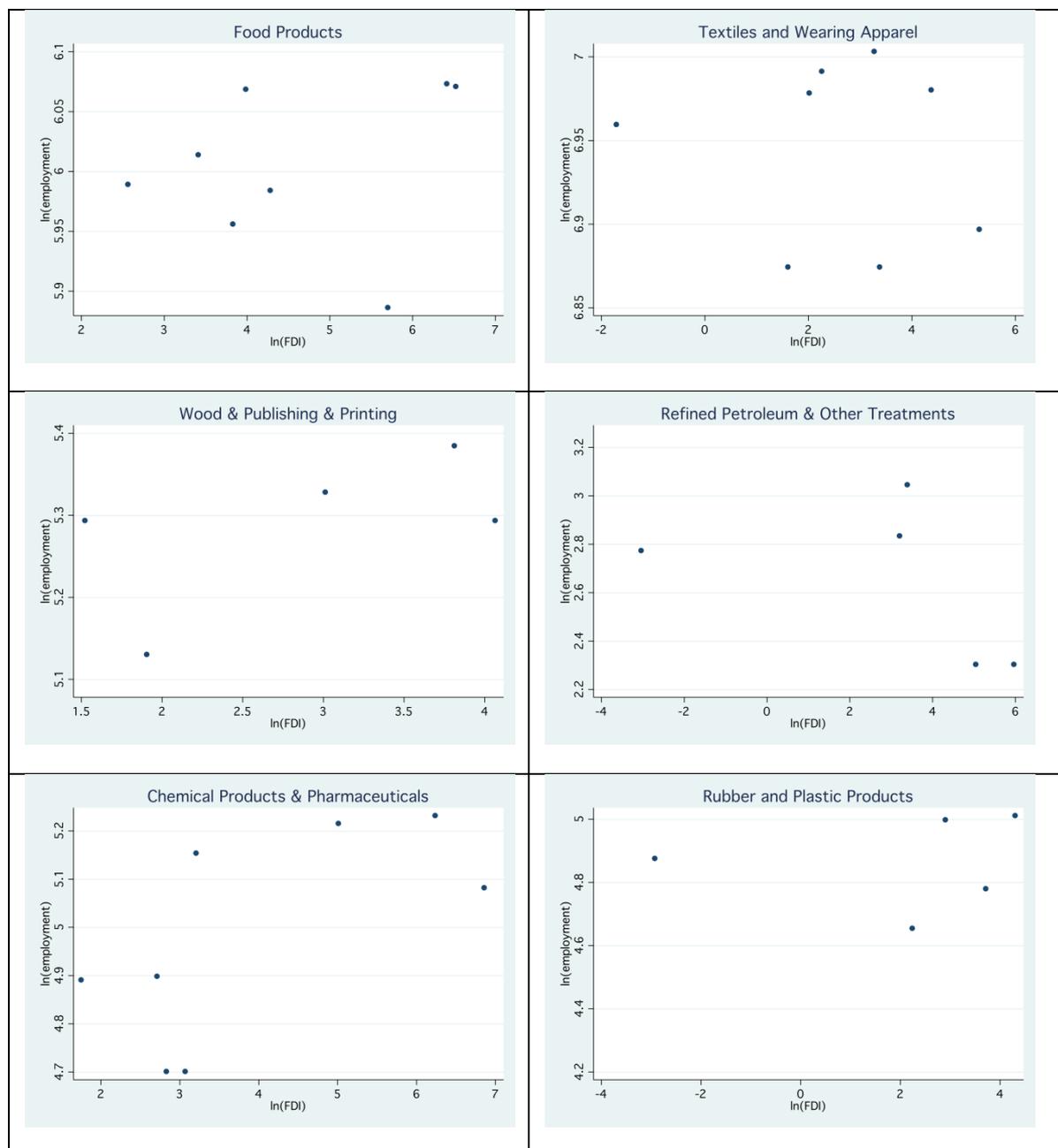
Figure 7: Scatter Diagrams of FDI and Employment at the Sectoral Level

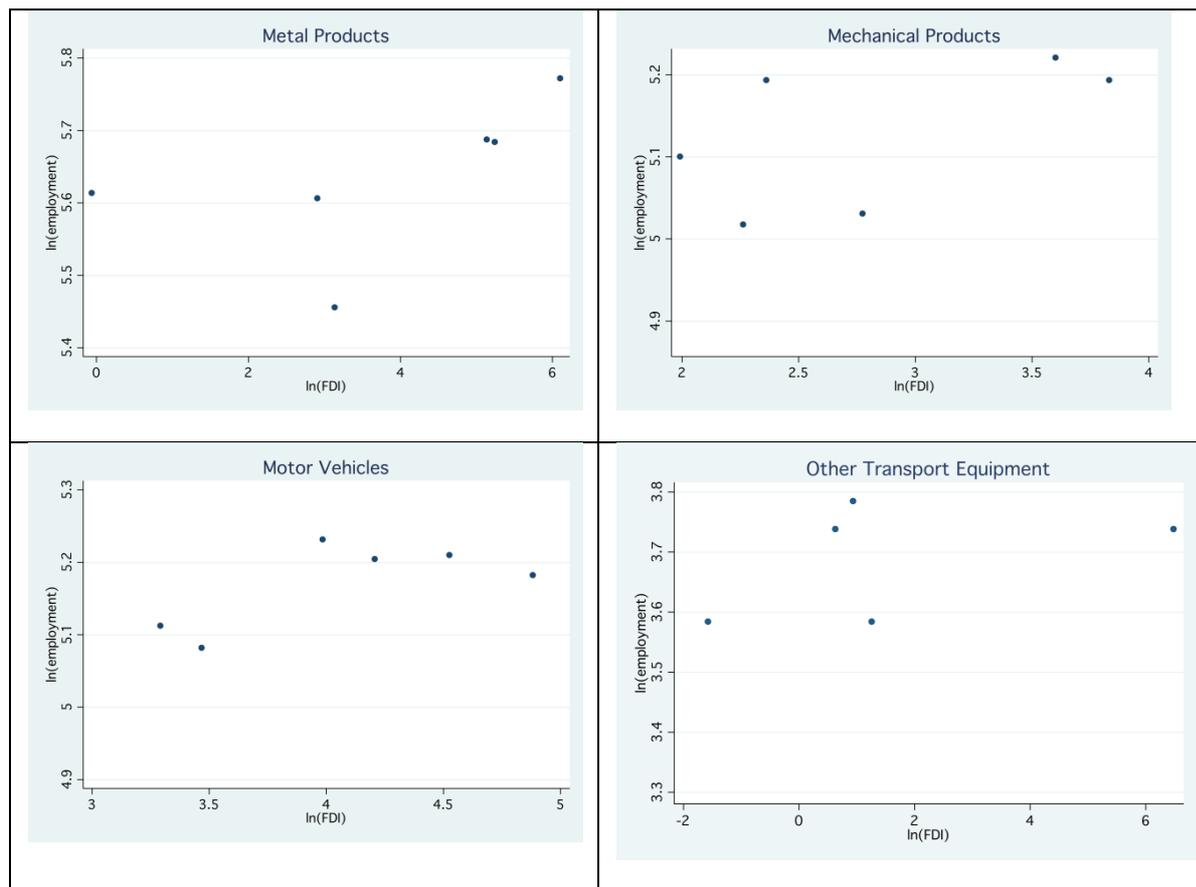




Scatter diagrams signal a positive relationship between FDI inflows and employment in all industries but agriculture & fishing, trade & repairs, and financial intermediation.

Figure 8: Scatter Diagrams of FDI and Employment for the Subsectors of Manufacturing





Scatter diagrams indicate that in manufacturing, FDI inflows had a positive relationship with employment in all sectors except refined petroleum and other treatments.

4.2. Methodology

This study examines how FDI inflows affect sectoral employment in the Turkish economy using a sample belonging to 19 sectors for the time period 2000-2007. Employment is considered as a function of lagged employment, current and lagged values of FDI inflows, and real wages. Because of its dynamic structure, the models are estimated by applying system Generalised Method of Moments (GMM).¹² GMM estimation of dynamic panel data models was first introduced by Arellano and Bond (1991), which is also referred as “difference GMM”. System GMM is an augmented version of this method, which was

¹² In dynamic panel data models, the Within Groups estimator yields inconsistent parameter estimates regardless of the unobserved effect being fixed or random. Similarly, statistical properties of the Generalised Least Squares (GLS) or Maximum Likelihood (ML) estimates strongly depends on the assumptions made for the initial value of the dependent variable as well as how the number of time periods and cross-sectional units approaches to infinity.

introduced by Arellano and Bover (1995) and later on developed by Blundell and Bond (1998). In comparison to difference GMM, system GMM produces better results for panel data with a short time period. Differently from difference GMM, which uses the lagged levels of the endogenous variables as instruments for their first differences, system GMM uses the lagged values of the first differences as instruments for the levels of the lagged dependent variable and other endogenous variables.

During the estimations, validity of the instruments is checked by using Sargan test of over-identifying restrictions for the models with no heteroscedasticity or autocorrelation while Hansen test statistic is used for the estimations with heteroscedasticity corrected standard errors.

The Arellano-Bond test for autocorrelation, which is calculated for the differenced residuals, is also applied. The test results for the second order autocorrelation are reported as the second order autocorrelation in differences implies a first order autocorrelation in levels.

5. Results

Mentioned above, this study employs a dynamic panel data analysis to estimate employment level as a function of one and two lagged levels of employment, current and one lagged values of FDI inflows and real wages¹³. The natural logarithm of employment and FDI inflows are used for the estimations. Wage information was only available for the manufacturing sub-sectors. Therefore, the models are estimated by using data belonging to all industry and sub-sectors and also separately only for the sub-sectors of manufacturing^{14,15}. This exercise also allows us to compare the differing impacts of FDI, if there are any, for the overall economy and for manufacturing.

¹³ Note that the number of available time series at the sectoral level for the period limits the number of right-hand side variables. Productivity indices measured per person as well as per hour are also experimented during estimations, but the results for these variables are not reported because of their insignificant parameter estimates.

¹⁴ Year dummies were also experimented, but excluded from the final regressions as they were insignificant.

¹⁵ See Appendix Table A4 for the summary statistics of the variables used in the estimations.

Table 1: Estimation Results for all Industries

	All sample	Share less than %1 dropped	Share less than %5 dropped
	ln(employment)	ln(employment)	ln(employment)
ln(employment)_{t-1}	1.278*** (0.235)	1.266*** (0.202)	1.274*** (0.249)
ln(fdi)_t	-0.018 (0.011)	-0.019* (0.01)	-0.026** (0.012)
ln(fdi)_{t-1}	-0.019 (0.016)	-0.02 (0.015)	-0.027 (0.019)
Constant	-1.414 (1.273)	-1.313 (1.086)	-1.234 (1.240)
No of observations	98	89	68
F-statistic	F(2,18)=21.35 Prob>F=0.00	F(2,16)=22.62 Prob>F=0.00	F(2,12)=31.15 Prob>F=0.00
Hansen test for overidentifying restrictions	Chi2(6)=8.54 Prob>chi2=0.20	Chi2(6)=7.66 Prob>chi2=0.26	Chi2(6)=3.76 Prob>chi2=0.71
Arellano-Bond test for AR(2) in first differences	z=-0.11 Prob>z=0.910	z=-0.34 Pr>z=0.74	z=0.39 Pr>z=0.70

*** Significant at 1 percent level, ** Significant at 5 percent level, * Significant at the 10 percent level
Note: Standard errors are reported in parenthesis

According to the results presented in Table 1, a 1% increase in the previous period's employment level increases the current employment by 1.3%, hence indicates a positive relationship between current and past employment in the process of economic growth. The first column presents the estimation results obtained for the complete set of industries and manufacturing sub-sectors. The impacts of current and previous period's FDI inflows are found to be negative but insignificant when all industries and subsectors are considered in the estimations. The second column excludes industries that have less than 1% share in total FDI inflows during the period examined.¹⁶ The values of parameter estimates do not change much when these industries are excluded, however the parameter estimate for current FDI becomes significant at 10% significance level. In similar vein, the third column excludes industries that have less than 5% share in total FDI inflows during the sample period.¹⁷ With the exclusion of these industries, we see that the negative and significant effect of current and previous

¹⁶ These industries are "agriculture and fishing", and "hotels and restaurants".

¹⁷ These industries are "agriculture and fishing", "mining and quarrying", "electricity, gas and water", "construction", "hotels and restaurants", "real estate, renting and business activities".

period's FDI inflows become significant at 1% significance level. The negative effect of current FDI inflows becomes significant at 5% significance level whereas previous period's FDI inflows remains insignificant. Parameter estimates for these two columns do not substantially differ from each other.

Table 2: Estimation Results for Manufacturing

	Model I	Model II	Model III	Model IV
	ln(employment)	ln(employment)	ln(employment)	ln(employment)
ln(employment)_{t-1}	0.928*** (0.061)	1.455*** (0.098)	1.557*** (0.162)	1.019*** (0.166)
ln(employment)_{t-2}			-0.368** (0.171)	0.155 (0.176)
ln(fdi)_t	-0.015** (0.006)	-0.033*** (0.008)	-0.021*** (0.007)	-0.013** (0.006)
ln(fdi)_{t-1}		-0.036*** (0.011)	-0.015* (0.009)	-0.016** (0.006)
wage index_t				-0.002*** (0.0004)
Constant	0.431 (0.305)	-2.185*** (0.482)	-0.881*** (0.172)	0.205 (0.184)
Number of obs.	59	49	46	46
F-statistic	F(1,57)=130.58 Prob>F=0.00	F(2,46)=125.54 Prob>F=0.00	F(3,42)=384.83 Prob>F=0.00	F(4,41)=674.06 Prob>F=0.00
Sargan test for overidentifying restrictions	Chi2(6)=10.13 Prob>chi2=0.12	Chi2(6)=4.92 Prob>chi2=0.55	Chi2(6)=9.76 Prob>chi2=0.14	Chi2(13)=21.34 Prob>chi2=0.07
Arellano-Bond test for AR(2) in first differences	z=1.12 Prob>z=0.26	z=0.53 Prob>z=0.55	z=1.31 Prob>z=0.19	z=0.59 Prob>z=0.56

*** Significant at 1 percent level, ** Significant at 5 percent level, * Significant at the 10 percent level
Note: Standard errors are reported in parenthesis

Table 2 presents results obtained for the manufacturing sub-sectors. Different model specifications are experimented. The first column includes one-lagged value of employment and current value of FDI as explanatory variables. The second column also includes one-lagged value of FDI while we add two-lagged value of employment in the third column. Consistent with the results presented in Table 1, the magnitudes and signs of the estimated parameters of lagged employment and FDI inflows remain relatively unchanged. As for the

whole sub-sectors, previous period's employment positively affects the current employment level. The parameter estimates of lagged and current FDI inflows are found to be negative and significant. Note, however, that the estimated elasticities of FDI (both current and lagged) are low. In the last column, real wage index is included in the analysis. Note that wage index is treated as an endogenous variable in the estimations as there is a two-way relationship between wages and employment. An increase in wage level is expected to have a reducing impact on employment while the rising unemployment would lead to lower wages. Turning to the regression results, the effect of wages is found to be negative as expectedly, but very low in size.

Obtaining significant and negative parameter estimates for both current and lagged values of FDI inflows signals that the employment losses caused by FDI inflows in manufacturing are observed not only in the year of investment, but also in the year following the investment. This can be related to the fact that the majority of foreign investment took the form of M&As in Turkey. After the investment, employees face job losses during the restructuring of the acquired firm. A part of job losses is experienced just after the acquisition while some employees could continue to work in the transition period during the restructuring of the firm. Yet, some of the employees are still destined to lose jobs at the further stages of restructuring as the reorganization of the firm comes to an end. All these results signal that FDI inflows to Turkey reduces employment in the industry or the sector that the foreign investment arrives.

One point that also has to be considered is that due to the data limitations this study can only examine the short-term impacts of FDI inflows. It is possible that the foreign investors create job losses during the first years of investment but the long-term impact could be different with the realisation of brownfield investment.¹⁸ Any increase in production capacity of these firms later on as well backward and forward linkages within the domestic economy can contribute to rising employment in the long run.

Note that the models that are estimated in this study do not consider employment switches from one sector or industry to another. Some employees can lose jobs in one sector but they can still be employed in another sector. Further analyses could be directed to explore this issue.

¹⁸ Brownfield investment is the investment via acquisition with the purpose of restructuring of the firm's characteristics such as product range, human resources, marketing and sale policy, etc.

It should also be noted that a reduction in employment in one sector might not necessarily imply a reduction in the economy-wide employment. While one sector faces job losses with the entries of foreign capital, foreign investment can create jobs in other sectors, that is the aggregate outcome can diverge from specific sectoral outcomes. The results presented in the study is obtained by panel data estimations hence the results only show the average impact of FDI at the sectoral level. As data for a longer time period become available, further analyses could focus separately on each manufacturing sub-sector since the impact of foreign investment might differ from one sub-sector to another.

6. Conclusion and Policy Implications

Turkey received record levels of FDI inflows during the 2000s. These inflows were also accompanied by high growth rates. Despite the rising FDI inflows and economic growth, however, she continued to suffer from high rates of unemployment. Given that FDI is considered to be a panacea for unemployment, this paper has examined the impact of FDI inflows on employment in Turkey by using a panel data analysis on 19 sectors for the 2000-2007 period. Results of system GMM estimations signal a negative impact of FDI inflows on employment level.

The discussion of the relationship between FDI inflows and employment leads us to consider an important issue in Turkey's agenda. Nowadays, Turkey aims to fulfil a change in the country's industrial structure. Turkey specialised in labour- and resource-intensive sectors through increasing flexibility of labour markets during the post-1980 export orientation period (Köse & Öncü 2000, 84). After exploiting low real wages and export subsidies as the basis of the export orientation of the industry in the post-1980 period, Turkish capital needed enhanced mechanisation and higher-value added production if it was to achieve a higher level of capitalist development (Gultekin-Karakas, 2008). Therefore, a structural transformation has been increasingly required to increase the shares of medium and high technology-based sectors in the manufacturing industry's production and export. Indeed, the signs of this change have already been observed in Turkey since the late 1990s. While the share of the medium and high technology sectors in total export almost doubled between 1996-2006, the share of low technology sectors decreased. However, the share of high technology sectors is still very low at around 4% (see Ercan, Gultekin-Karakas, Tanyılmaz 2008).

FDI has a special importance for Turkey as it is seen as crucial in fulfilling the desired shift in Turkish industry. For example, Yılmaz (2007) stresses the need for a FDI strategy in Turkey that will have sectoral priorities. Beyond simply attracting more FDI into Turkey, foreign investment, Yılmaz argues, is needed particularly in prioritized sectors, such as electronics and information and communication technologies. As well, automotive industry is claimed to have the highest potential for FDI in the mid-term. According to Yılmaz, in the mid- and long-term, the goal of Turkey's FDI strategy should be to attract technology-intensive greenfield investments. In the short-run, FDI inflows mainly via M&As can play a role in the finance of current account deficits. In the mid- and long-term, FDI inflows via high-tech greenfield investment both can fuel an accelerated export performance and also contribute to the elimination of current account deficits.¹⁹ Only this kind of foreign investment can contribute to technological development as well as job creation in Turkey, Yılmaz stresses. In order to sustain competitiveness, Turkey needs high-tech based foreign investment as low wages can not be the basis for competitiveness further given the cheap labour in China and India (Yılmaz 2007). In brief, FDI is considered to be a panacea for economic growth by serving to the technological transformation in manufacturing as well as for unemployment. However, even if foreign investment accelerate economic growth, it is not always the case that FDI helps to create jobs.

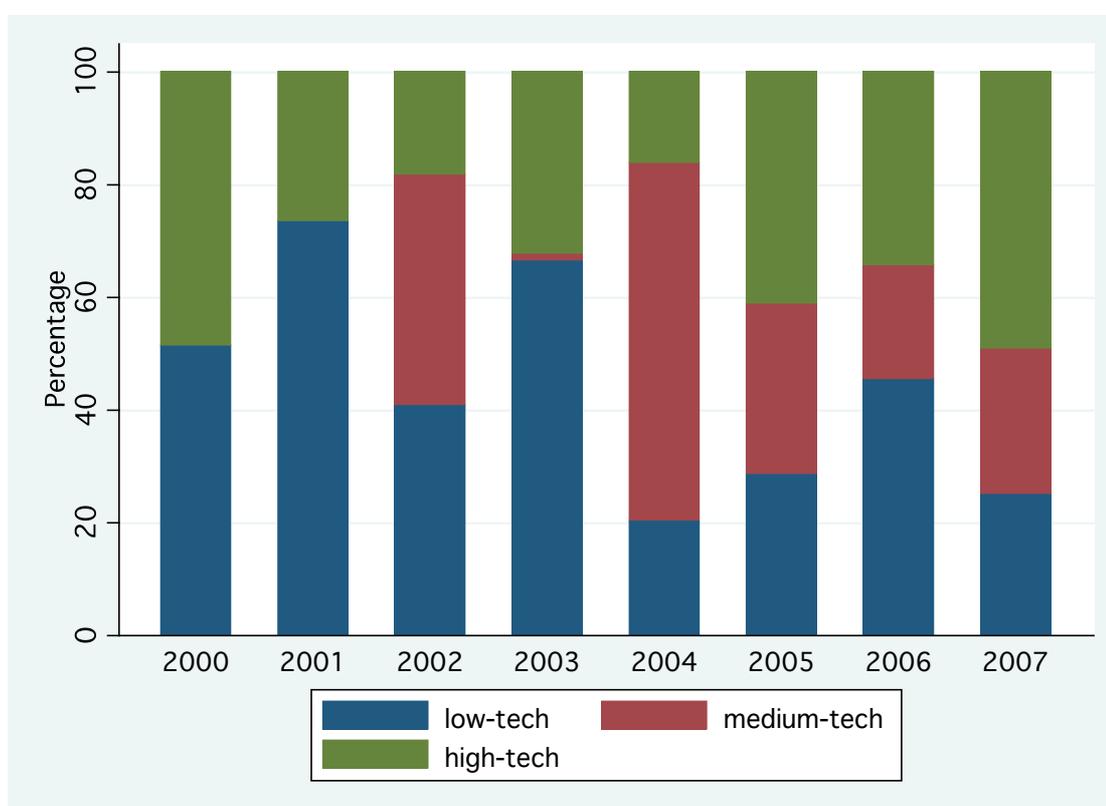
The impact of FDI on employment strongly depends on the mode of its entry. Greenfield investment, for example, is expected to generate new employment opportunities while M&As do not create any jobs, and might even reduce employment level with more efficient use of labor. After the investment, during the restructuring of the acquired firm employees face job losses. This negative impact can turn to be positive in the long-run as any increases in production capacities of the acquired firms as well as backward and forward linkages within the local economy can enhance employment opportunities in the overall economy. The exact outcome depends on how these process evolve.

¹⁹ When we look at the sectoral distribution of FDI flows to Turkey, it is seen that foreign capital tends to flow to the non-tradable sectors such as banking and finance, energy, telecommunications, and retailing. Therefore, instead of helping to the elimination of foreign exchange scarcity in the long run, foreign investment can even potentially lead to net capital outflows via profit transfers.

Besides, taking the form of either greenfield or brownfield investment, employment effect of FDI will depend on the labour/capital intensity of the sector that the investment takes place. Foreign investment in a labour-intensive industry will certainly have a higher contribution to employment than investment in a capital-intensive industry.

The negative employment impact of FDI in Turkey is consistent with these arguments. Firstly, taking into consideration the average sizes of capital invested,, foreign firms have tended to enter via mostly M&As which have limited, even negative employment capacities.

Figure 9: Distribution of FDI Inflows in Manufacturing According to Technology Level²⁰



Note: Low-tech industries: Food products, textiles and wearing apparel, wood and publishing
 Medium-tech industries: Mechanical products, metal products, refined petroleum, rubber and plastic
 High-tech industries: Chemical and pharmaceuticals, motor vehicles, other transport.

Furthermore, the trends in the distribution of foreign investment in manufacturing indicate that FDI inflows started to be in line with the desired transformation in Turkish industry. Figure 9 shows that there have been changes in the distribution of foreign

²⁰ See Appendix Table A5 for the percentage distribution of FDI Inflows according to technology level.

investment within manufacturing among low-, medium- and high-tech sectors in the 2000s. Firstly, it is seen that foreign investment in low-tech sectors has had a tendency to decline. Secondly, medium-tech sectors started to attract foreign capital after 2001 in large amounts. And thirdly, even though the share of high-tech sectors declined together with the 2001 financial crisis, there has been an increasing foreign entry to this group of sub-sectors since then. The shift of foreign investment from low-tech to medium- and high-tech industries in manufacturing could lead to the detrimental effect on employment that the analysis found above.

As the financial crisis evolves to a recession worldwide, global FDI flows will likely to decline. The outlook for FDI inflows to Turkey is also not very promising as a significant drop in FDI flows has already been recorded in 2009.²¹ Previously postponed privatizations such as electricity distribution and generation, highways and bridges, as well as the national lottery can attract still FDI to Turkey (Deloitte 2009, 5). However, if Turkey is determined to fulfill a structural shift in industrial production, FDI needs to be attracted to the sectors in manufacturing that can help to achieve this aim.

The changes in the sectoral distribution of FDI are consistent with the aim of the Turkish government for a shift in Turkish manufacturing from low-tech towards high-value added, high-tech sectors. However, this shift also signals that foreign investment cannot be considered as a panacea for unemployment in Turkey, at least in the short- and medium-run. Foreign investment can lead to positive employment outcomes only in the long-run via production capacity increases in the acquired firms after their reorganizations are completed. Also, backward and forward linkages within the domestic economy can enhance job opportunities in the overall economy.

At this point, the Turkish state faces a dilemma: on the one hand, it seeks to fulfil the needed shift towards high-tech industries and on the other hand, to reduce the persistently high rates of unemployment which is getting worse due to global recession. Considering that the priority of Turkish state is to fulfil the structural transformation in the economy, there is need for alternative policy measures to reduce unemployment other than FDI inflows.

²¹ See Erdilek (2009) for the demands of the Investment Advisory Council for Turkey (IAC), comprising top-level executives of major multinational corporations, international organizations and business associations, from the AK Party Government for improvement in the business climate.

However, we should also stress that even if FDI inflows have a potential to deteriorate the unemployment problem in the short-run, we can expect the state to implement policies to attract greenfield investment to medium- and high-tech industries that can serve to the industrial transformation in the long-run. As a matter of fact, Turkey has not been successful in attracting greenfield investment compared to Czech Republic, Hungary and Poland that have become the three most important host countries among the transition economies in the 1990s and 2000s (Yılmaz 2007, 10). The dominance of privatization and M&As can be attributed to the low level of education, unskilled labour force, low R&D expenditures and, high taxes (Yılmaz 2007, 12). Therefore, it can be concluded that FDI inflows cannot be expected in large amounts to the high-tech sectors without an education reform that can serve to increase the skill level of the labour force. This means that FDI can not contribute to the alleviation of the unemployment problem in Turkey otherwise even in the long-run. The demands of business groups and organizations that seek rising integration into the global economy are also in line with this argument.²²

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²² See for example the demands of International Investors Association (YASED) which represents major multinational companies with FDI in Turkey in Yılmaz (2007).

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APPENDIX

Table A.1. Percentage FDI Inflow Shares of Industries

Industries	Percentage Share
Agriculture and Fishing (A+B)	0.09
Mining and Quarrying (C)	1.16
Manufacturing (D)	18.32
Electricity, Gas and Water (E)	1.79
Construction (F)	1.49
Trade and Repairs (G)	5.24
Hotels and Restaturants (H)	0.24
Transports, Storage and Communication (I)	26.03
Financial Intermediation	43.71
Real Estate, Renting and Business Activities (K)	1.93
Total	100

Table A.2. Percentage FDI Inflow Shares of Manufacturing Sub-Sectors

Sub-sectors	Percentage Share
Food Products (15+16)	26.81
Textiles and Wearing Apparel (17+18)	5.24
Wood, Publishing and Printing (20+21+22)	2.00
Refined Petroleum and Other Treatments (23)	8.61
Chemical Products, Pharmaceuticals (24)	25.22
Rubber and Plastic Products (25)	1.85
Metal Products, Basic Metal (27+28)	12.61
Mechanical Products (29)	1.87
Motor Vehicles (34)	6.00
Other Transport Equipments	9.78
Total	99.99

Table A.3 ISIC Rev.3 Codes of Industries and Subsectors included in the study

	Industry	Subsectors
A+B	AGRICULTURE AND FISHING	
C	MINING AND QUARRYING	
D	MANUFACTURING	
	15+16	Food products
	17+18	Textiles and wearing apparel
	20+21+22	Wood,publishing and printing
	23	Refined petroleum & other treatments
	24	Chemical products
	25	Rubber and plastic products
	27+28	Metal products
	29	Mechanical products
	30	Office machinery and computers
	32	Radio,TV,communication equipments
	33	Medical, precision and optical instruments, watches and clocks
	34	Motor vehicles
	35	Other transport equipments
E	ELECTRICITY,GAS AND WATER	
F	CONSTRUCTION	
G	TRADE AND REPAIRS	
H	HOTELS AND RESTAURANTS	
I	TRANSPORTS, STORAGE AND COMMUNICATION	
J	FINANCIAL INTERMEDIATION	
K	REAL ESTATE, RENTING AND BUSINESS ACTIVITIES	

Table A.4 Descriptive Statistics: (2000-2007)

Whole Sample						
Variable	Obs	Mean	Std. Dev.	Min	Max	
FDI	123	342.3	1157.2	-20.8	9254.2	
Log of FDI	123	3.5	2.3	-3.0	9.1	
Employment	152	396.3	396.6	10.0	1834.0	
Log of Employment	152	5.5	1.1	2.3	7.5	
Manufacturing Sector						
Variable	Obs	Mean	Std. Dev.	Min	Max	
FDI	62	108.9	197.7	-20.8	955.0	
Log of FDI	62	3.2	2.1	-3.0	6.9	
Employment	80	254.6	284.9	10.0	1100.0	
Log of Employment	80	5.0	1.1	2.3	7.0	
Real Wage Index	80	460.4	70.1	369.5	766.7	

Note: All monetary variables are in real terms.

FDI is measured by million dollars and employment is in thousands.

Table A.5. Percentage Shares of FDI Inflows in Manufacturing According to Technology Level

year	Low-tech	Medium-tech	High-tech	Total
2000	51.43	0	48.57	100
2001	73.49	0	26.51	100
2002	40.88	40.88	18.24	100
2003	66.53	1.22	32.24	100
2004	20.37	63.45	16.19	100
2005	28.62	30.26	41.12	100
2006	45.46	20.21	34.33	100
2007	25.11	25.79	49.1	100