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Makro Ekonomi Açısından Doğrudan Yabancı Yatırımlar ve İstihdam

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Öz

Doğrudan yabancı yatırımın yapıldığı ev sahibi ülkenin istihdam yapısı üzerindeki etkileri doğrudan ve dolaylı olmak üzere iki şekilde ortaya çıkmaktadır; yeni şirket kurulması şeklinde gerçekleşen doğrudan yabancı yatırım istihdama doğrudan etkileri nedeniyle istihdam üzerinde pozitif etki yapması beklenilmektedir. Aynı zamanda sektörel bağlantılar nedeniyle de doğrudan yabancı yatırım istihdamı dolaylı olarak etkileyebilmektedir. Yapılan bu çalışmanın amacı doğrudan yabancı yatırımların istihdam üzerindeki etkilerini araştırmaktır. Ekonometrik yöntem olarak Zaman Serisi Analizi yöntemi seçilmiştir. Bu yöntem ile "Doğrudan yabancı yatırım, istihdam üzerinde pozitif bir korelâsyona sahiptir" şeklinde bir hipotez kurulmuş ve test sonucunda doğrudan yabancı yatırım ile istihdam arasında uzun dönemde anlamlı bir ilişki tespit edilmiştir.

Anahtar Kelimeler: Makro Ekonomi, İstihdam, Yabancı Yatırımlar, Zaman Serisi, Türkiye

Foreign Direct Investments and Employment in terms of Macroeconomics

Abstract

The effects on the employment structure of the host country where the foreign direct investment takes place appear in two ways; directly and indirectly. Direct foreign investment in the form of the establishment of a new company is expected to have a positive effect on employment due to its direct effects on employment. At the same time, the direct foreign investment may indirectly affect employment due to sectoral links. This study aims to investigate the impact of foreign direct investment on employment. The Time-Series Analysis method was chosen as the econometric method. The "Foreign direct investment has a positive correlation with employment" hypothesis was developed through this method and a meaningful long-term relationship between foreign direct investment and employment was identified as a result of the test.

Keywords: Macro Economy, Employment, Foreign Investments, Time-Series, Turkey

Introduction

As capital movements between countries, impediments to trade and foreign investments, as well as costs associated with transportation and communication are reduced, companies have a widening array of choices as to where and how to produce and whom to sell. Thus, while industries and companies whose activities expand into overseas regions increase rapidly on the one hand, on the other, competition in these markets grows fierce. Most important of all, as foreign investments of companies increase, international production increases rapidly, and these investments contribute not only to the expansion of national markets but also to the emergence of broader and broader regional and global markets.

It has been observed that liberalization of trade in goods as well as of international direct foreign investment flows increased, especially in the last 10 years, and also that it functions as a super multiplier. There is, in general, a strong positive correlation between liberalization of trade in goods and foreign direct investment (Kesgingöz, 2013) (Kesgingöz ve Oğuz, 2016). That is to say: the less the degree of liberalization in trade in goods, the less the foreign direct investment (Kesgingöz, 2015). As liberalization increases, foreign direct investments also increase rapidly. Partly one of the most important reasons for the growth of capital assets acquired by foreign companies is, without doubt, the liberalization of trade in goods and services and the new profit opportunities it has created. Foreign direct investment offers more opportunities for profitable trade in products and services.

The Effects of Direct Foreign Investment on Employment

The 1994 World Investment Report, which details the effects of FDI on employment, divides the impacts of FDI on employment into two as direct and indirect effects. Direct effects are those that emerge at the same time as the investment is made (Vergil and Ayaş, 2009: 6), (Kesgingöz and Karataş, 2016:598). While indirect effects arise as a result of economic changes caused by FDI. According to Hirschman's investment theory, some indirect effects emerge as a result of complementary investments made by domestic and foreign investors. (Lal, 1995: 521). This theory holds that investments, regardless of the sector in which they are made, encourage new investments and thus act as stimulants for other investors as a result of dynamic development (Rolf, 1994: 6). The production of imported raw

materials and inputs by domestic companies will lead to an increase in employment.

It is challenging to estimate or measure the effects of FDI on employment. In addition to their potential to increase employment, indirect impacts also have the potential to reduce employment. Therefore, just as FDI may positively affect employment, it can also lead to a decrease in employment rate (Knoedler, 2000: 44). If foreign investment reduces domestic production or increases dependence on imported inputs, it will have a negative impact on employment.

Factors such as the techniques used in production, the sector in which the investment is made, the size of the investment, and most notably the aim of the investor, determine which one of the possible effects of FDI on employment will emerge in the end (Golejewska, 2001: 103). Since investors aim to reduce labor costs when they invest, they shift their production activity to developing countries. Because capital-intensive techniques are adopted in investments relating to scarce resources, it is argued that contribution to employment is limited in the case of the investments made to benefit from general markets to the employment in which they do not contribute (Vergil and Ayaş, 2009: 7).

The impact of FDI on employment has a significant effect on the stability of the economies of developing countries. For in a stable economy, only stable employment policies can be implemented. The significant impacts of FDI on employment are shown in Table 1. Especially in developing countries where unemployment emerges as a chronic economic problem, it is expected that FDI contributes significantly to employment. In these countries, the labor force is channeled from the agriculture sector to the industrial and services sector to sustain a stable growth rate (Karagöz, 2007: 102).

If we consider the issue in the context of Turkey; despite the significant economic progress Turkey has made in recent years, the fact that the unemployment rate remains high shows the need for the implementation of different and useful employment policies. However, current literature on the impacts of FDI on employment in Turkey is rather sparse.

Stability has been gained in the case of many of the macroeconomic magnitudes which were aimed at by certain policies and strategies in the Turkish economy. Indeed, medium- and long-term fiscal programs which are implemented in Turkey are prepared for this purpose. However, none of the policies implemented have provided a radical solution to the problem of chronic unemployment.

Data and Empirical Method

Data obtained from the World Bank between 1990 and 2016 have been used in this study to explore the relationship between employment in Turkey (U) and the variables of FDI, government expenditure (Gov Exp), foreign trade deficit (Trop) and per capita Real Gross Domestic Product (RGDP). In the empirical model:

$$U_{it} = \alpha_i + \beta_1 FDI_{it} + \beta_2 \text{ Gov Exp } it + \beta_3 Trop_{it} + \beta_4 RGDPpc_{it} + + \varepsilon_{it} \quad (1)$$

U_(it) corresponds to employment rate (natural logarithm), FDI to the ratio of net FDI inflows to GDP, Gov Exp to the ratio of government expenditures to GDP, Trop to Foreign trade deficit, RGDP to Real GDP per capita (natural logarithm), and), εit to the stochastic error term.

Cointegration analysis was used to determine whether the variables used in the study move together in the long run and the ADF unit root test was used to assess the stability of the variables developed by Dickey-Fuller (1981).

Structural changes may occur in economic time series as a result of crises, changes in economic policies and natural disasters. As is often the case with most econometric methods, when these tendencies in data are not taken into account, biased results may emerge.

As reported by Perron (1989), the Dickey-Fuller (DF) test does not yield effective results in the event of a fraction. Thus, unlike the DF test, which identifies structural portions intrinsically, a new single-fraction test has been developed in Perron (1989) to determine these fractions externally. Zivot-Andrews (1992) (ZA) unit root test will be used in this study. The following models are considered for the ZA unit root test (Yılancı and Özcan, 2010: 25).

$$y_t = \mu + \beta t + \delta y_{t-1} + \theta_1 DU(\lambda) + \sum_{i=1}^{k} \delta_i \Delta y_{t-i} + e_t \qquad \text{(Model A)}$$

$$y_t = \mu + \beta t + \delta y_{t-1} + \theta_2 DT(\lambda) + \sum_{i=1}^{k} \delta_i \Delta y_{t-i} + e_t \qquad \text{(Model B)}$$

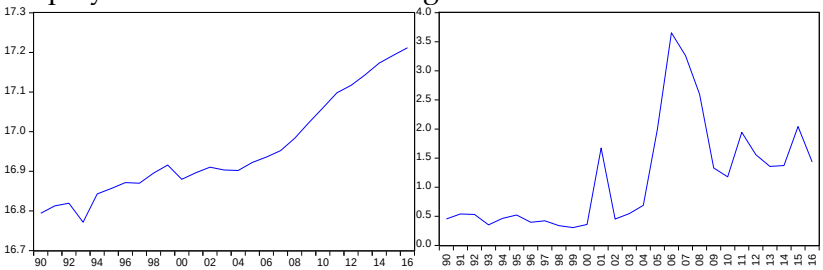
$$y_t = \mu + \beta t + \delta y_{t-1} + \theta_2 DT(\lambda) + \theta_1 DU(\lambda) \sum_{i=1}^{k} \delta_i \Delta y_{t-i} + e_t \text{ (Model C)}$$

In the equation above, Model A includes the structural change in the mean, Model B the fundamental change in gradient, and Model C both the structural change in the mean and gradient.

Graphical presentation of the series was examined after the series had been freed from seasonal effects. The graphs of the series versus time are shown in Figures 1, 2, 3 '.

Figure 1: Graph of Employment and FDI variables vs. Time

Employment Foreign Direct Investments



As can be seen in Figure 1, it can be said that the employment and FDI variables did not have a regular distribution over the period of 1990-2016 and displayed deterministic characteristics. Therefore, it can be noted that the employment variable tends to increase continuously since 2004 with the decrease in the effects of the 2001 crisis, while the share of the FDI variable in GDP reached its maximum level in 2007.

Figure 2: Graph of Government Spending and Foreign Trade Deficit Variables vs. Time

Government Spending Foreign Trade Deficit

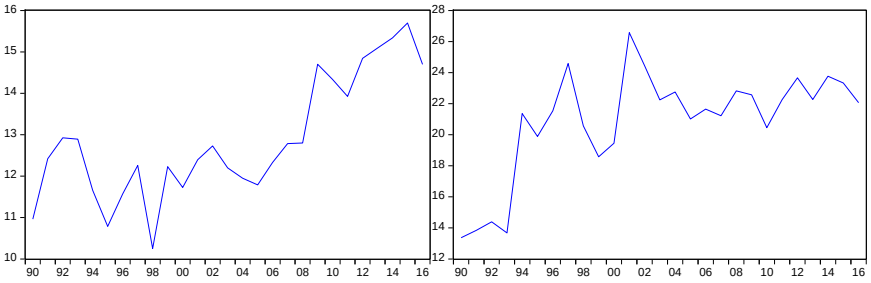
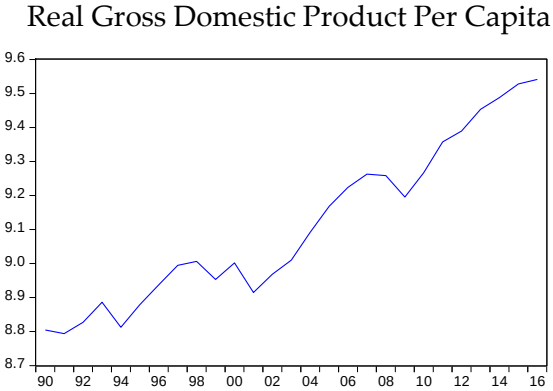


Figure 3: Graph of RGDP per capita variable vs. Time



ADF, PP, KPSS unit root tests were performed because they would not give sufficient information about the structure of the visual detection series (Pehlivan and Utkulu, 2007: 39-65). The data on the results of these tests are shown in Table 1.

Table 1: Unit Root Test Results

	ADF Test				PP Test				KPSS Test			
variable	level		First Difference		level		First Difference		level		First Difference	
	Fixed	Trend and Fixed	Fixed	Trend and Fixed	Fixed	Trend and Fixed	Fixed	Trend and Fixed	Fixed	Trend and Fixed	Fixed	Trend and Fixed
U	3,044	-1,39	-1,95	-4,82	-1,4	-0,89	-5,37	-6,04	0,72	0,18	0,36	0,1
FDI	-1,97	-2,35	-4,47	-4,38	-1,97	-2,35	-4,44	-4,32	0,46	0,09	0,08	0,07
Gov Exp.	-0,76	-2,73	-6,64	-6,59	-1,64	-2,73	-7,35	-9,7	0,62	0,16	0,14	0,11
Trop	-2,89	-2,83	-3,68	-2,71	-2,89	-2,66	-6,72	-12,7	0,48	0,17	0,41	0,5
RGDP	0,293	-2,25	-5,19	-4,27	0,353	-2,3	-5,19	-5,16	0,76	0,15	0,12	0,04

Note: Critical value according to% 5 significance level; Level values for the ADF and PP test are -2,981 and -2,986 for the first delayed values, respectively. The critical values for the KPSS test are level values, and the first delay values are 0.463.

According to the results of ADF unit root test, it is observed from Table 1 that FDI, Gov Exp, Trop and RGDP variables are not stable in the level values, and that all variables are stabilized after receiving the first difference at the level of 5% significance level. Therefore, it is possible to apply the time series method to series which are integrated at the same level.

The DF test and the GDF test are based on some basic assumptions such as that the error terms contain ambiguous elements and are covariant. Phillips and Perron (1988) noted in their study that these two tests were inadequate when subjected to structural fractions with an unexpected shock effect that emerges in the time series. To get rid of these unexpected fraction effects in the model, they devised a non-parametric addition intended to correct error terms. According to the PP test results obtained from Table 1, it is observed that not all variables in the level values are stable.

The common point in the DF, GDF and PP tests is that the hypothesis H0 contains the unit root of the series, that is, the series is not stable. The opposite holds true for the KPSS test. The Ho hypothesis assumes that the series does not contain unit roots and that the series is stable. The KPSS unit root test results from Table 1 support the ADF unit root test results. The results of the ZA unit root test, taking into account the possible structural fractions in the data after the stationarity test, are shown in Table 2.

Table 2: Zivot - Andrews Unit Root Test Results

	U		FDI		Gov Exp.		Trop		RGDP	
	Model A	Model C	Model A	Model C	Model A	Model C	Model A	Model C	Model A	Model C
Test Statistic	-4,02	-3,97	-2,87	-4,59	-4,89	-4,81	-4,79	-5,53	-3,32	-3,86
Date of Refraction	2007	2003	2008	2005	1999	1998	1997	1994	2002	2001
Delay Length	0	0	0	0	0	0	0	0	0	0
Critical Value (%5)	-4,42	-5,08	-4,42	-5,08	-4,42	-5,08	-4,42	-5,08	-4,42	-5,08

Note: Critical values are obtained from Zivot, Andrews (1992).

The results of the ZA unit root test are shown in Table 2. While interpreting the ZA unit root test results, the test statistic is compared with the ZA critical value. In case the test statistic turns out to be less as an absolute value; the primary hypothesis that indicates the unit root without structural fraction cannot be rejected for the model whose effect is researched for. When we examine the results for Model A; all variables other than Gov Exp and Trop series have unit roots without structural fraction. Then, Model C is estimated for all

variables. According to Model C; it is observed that the series is trend-stable as well as a structural fraction that occurs in the trend function of the Trop variable. According to Model C, all remaining variables have unit root without structural fraction.

When we interpret the fraction years; the most obvious variable is employment rate. In Table 2, the fraction date for this variable is given as the year 2003. Mainly as a result of foreign capital leaving the country and many companies pulling out of the market after the crisis in 2001, the number of people employed in Turkey decreased when compared to the years before. The ultimate effects of the foreign capital leaving the country as a result of 2001 crisis came to light in 2005 for the FDI variable according to Model C. The high current account deficit that emerged as a result of over-valuation of Turkish Lira in 1994 caused structural fractions in the foreign trade deficit. It is also possible to relate the per capita real GDP variable to the 2001 crisis according to Model C.

The result of the GH cointegration test results are shown in Table 3 to determine whether there is a long-term relationship between variables after conducting the ZA unit root test which considers structural breaks.

Table 3: Gregory–Hansen Cointegration Test Results

Model	ADF*	T_b	Z_t^*,	T_b	Z_a^*	T_b
CC	-5,96 (1)	2001	-5,44	2002	-28,79	2002

Note: The values in brackets indicate the lag length. Critical values are ADF * at 5% significance levels and -5.56 for Model CC for Z_t^*. The critical value for Z_a^* at 5% significance level is -59,40.

The results of GH Cointegration tests can be seen in Table 3. The "Z" _"t" ^"*" and "Z" _"t" ^"*" test statistics as absolute values for Model CC are less than the critical value at 5% significance level. However, the ADF * test statistic is higher than 5% critical value as the absolute value. Hence, according to the results of GH cointegration test results, the hypothesis that there is cointegration between variables is accepted based on 5% probability value, which is the alternative of the main hypothesis (Yılancı and Özcan, 2010: 30). After determining the long-term relationship between variables through GH test, the long-term estimation results of the employment model is shown in Table 4 to trace the effect of independent variables on the dependent variable.

Table 4: Long-Term Estimation Results of the Employment Model, Dependent Variable: U_{it}

Variable Name	Coefficient Estimation	T-Statistics	P-value
FDI	0,0219	-2,9487	0,0074
Gov Exp	0,0171	8,6886	0,0191
Trop	0,0036	2,5304	0,0775
RGDP	0,4583	1,8518	0
c	12,508	31,5729	0

According to Table 4, all variables except for foreign trade deficit are statistically significant, and the signs are in the expected direction. In the long-term, when FDI increases by 1%, employment increases by about 0.02%. An increase of 1% in the government expenditures and per capita real GDP variables causes an increase in employment by 0,01% and 0,45% respectively. That an increase in FDI causes an increase in employment shows parallelism with the theory. Indeed, Vernon Product Circuit Theory (1960) foresees that the manufactured products can replace places until the standardization of the products, and it will create employment opportunities in the countries where product manufacture costs are lower. The low estimate of the coefficient of the government expenditure variable indicates that the resources created are used in fields different than employment. In the model, this variable turned out meaningless as expected. According to model results, the variable that affects employment the most is per capita real GDP. This is based on the theoretical basis of the growth-employment relation. It is possible to define growth as "the shift of the production possibilities curve to the right." The shift of the production possibilities curve to the right requires more production of goods and services than the produced in the current situation. Thus, in the third-world countries where the technology level is low, an increase in employment can be realized as labor-intensive production techniques are used in these countries.

After examining the long-term estimation results of the employment model in Table 4, to determine the causality relation between the variables as well as the direction of this relation, Granger Causality Test analysis was conducted, and the results of this test are given in Table 5.

Table 5: Granger Causality Test Results

Sample: 1990-2016			
Iags: 2			
H_0 Hypothesis	Observation	Chi 2	Probability
U is not the granger cause of FDI	27	5,201	0,074
FDI is not the granger cause of U	27	1,978	0,372
U is not the granger cause of Gov Exp.	27	13,55	0,001
Gov Exp is not the cause of U's granger,	27	5,858	0,053
U is not the granger cause of Trop	27	12,85	0,002
Trop is not the granger cause of U	27	1,456	0,483
U is not the granger cause of RGDP	27	28,88	0
RGDP is not the granger cause of U	27	6,227	0,044

According to the results of Granger Causality Test in Table 5, a two-way causality relation between the employment variable and the per capita real GDP variable is pointed out. No causality relation between employment and FDI could be determined. There is a one-way causality relation between the remaining variables and employment, depending on the 5% probability value.

Result

According to the GH cointegration test findings obtained from the study, a long-term relationship was explored between foreign direct investment and employment. This situation shows that FDI can be effectual in achieving the desired level of employment in Turkey. Hence, according to the results obtained in the study; the hypothesis "FDI has a positive correlation on employment" which was formed in the introductory part of the study is confirmed in the long term although it was rejected for Turkey in short-term. According to the results of the analysis conducted, regarding fraction dates, employment, Government expenditures, foreign direct investments,

foreign trade deficit and per capita reel GDP; Zivot-Andrews unit root test, applied under structural fractions, yields the years 2003, 1998, 2005, 1994 and 2001 respectively. According to the theory of economics, these structural fractions that occur in the time series might derive from the economic crisis, changes in the economic policies, or technological change. However, to maximize employment-creating effects of FDI, it needs to be in the form of greenfield investment rather than buying and merging. Because, theoretically, FDI is expected to affect employment positively only in case new investments are made. The Granger causality test was applied to determine the relation between FDI and employment. As a result of the causality test, it is found out that employment variable has a causal relationship with all variables except FDI. The lack of causal relationship of employment variable with FDI is an expected condition in theory. Investing in the form of privatization or the lack of employment structure appropriate for the type of investment will have no positive or adverse effect on the level of employment. Moreover, causality analysis is a short-term analysis.

Therefore, this result shows us that the FDI does not have any impact on employment. Developing countries such as Turkey must focus more on specific employment policies rather than focusing only on general employment policies, to reduce unemployment which is in direct correlation with employment as a concept. Local investments aimed at reducing unemployment must be made with different climatic, geographical features and conditions of each of the seven regions of Turkey in mind, based on local employment policies. Hence, rather than abandoning the employment structure of Turkey to FDI, new strategies around regional employment policies with regards to the geographical attributes of Turkey must be developed and local investments must be given priority.

As a result, when the effects of FDI on employment are taken into consideration, Turkey must be taken further advantage of; by re-arranging workforce markets, accomplishing balanced distribution of foreign capital between industrial sectors, improving investment conditions for foreign financiers and making the necessary legal changes.

Countries have recently begun deploying third-generation policies to attract investments directly into themselves. First-generation policies involve setting up the appropriate legal framework and the conditions required to make the legal process work as intended. In addition to this, second-generation policies involve establishing the necessary institutions for investment and application of active

advertisement policies. Adding furthermore to the first two policies, third-generation policies are based on highlighting the industrial sectors that use global and advanced technologies and are aimed at the host country's achievement of the desired state of development both politically and economically, also at the acquisition of trained workforce and creating the conditions necessary such as key input. Therefore, third-generation FDI policies; increased the quality of vocational training, increased the potential of the workforce who can employ contemporary technology, will create the workforce that is suitable for the structure of demands of the potential investments. This way, foreign investors will choose the qualified workforce in the country that they will invest in, over bringing in the workforce from their own country. To increase employment, a condition of "providing a certain rate of employment with foreign investments for the increase of employment" can be mandated to direct foreign investments.

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