

Real Exchange Rate, Wealth, Wages and Foreign
Direct Investment in Turkey

MBA THESIS

C. Mert BÖKE
December, 1996

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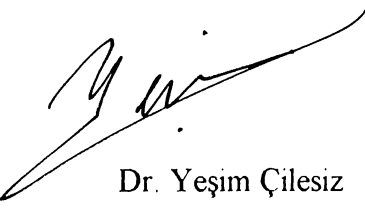
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C. Mert Böke
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Dr. Yeşim Çilesiz

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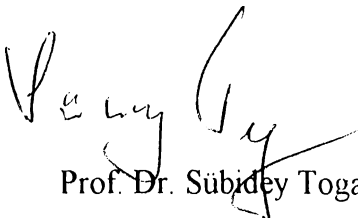
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Dr. Selçuk Caner

Approved by the Institute of Management Sciences



Prof. Dr. Sübidey Togan

ABSTRACT

*REAL EXCHANGE RATE, WEALTH, WAGES AND FOREIGN DIRECT
INVESTMENT IN TURKEY*

C. Mert Böke

Master of Business Administration in Management

Supervisor: Dr. Yeşim Çilesiz

December 1996

In this study, the relationship between real exchange rates, relative wealth, relative wages and foreign direct investment inflows to Turkey is examined. Fixed effects regressions are used on foreign direct investment inflow data from eight countries over the period 1986-1995. The results show that a depreciation of the Turkish lira, an increase in Turkish wages relative to the corresponding source country wages, and a decrease in relative wealth are associated with increases in FDI inflows to Turkey.

Key words: Foreign direct investment, real exchange rates, relative wealth, relative wages

ÖZET

REEL DÖVİZ KURU, SERVET, ÜCRETLER VE TÜRKİYE'DE YABANCI SERMAYE

C. Mert Böke

İşletme Yönetimi Yüksek Lisans

Tez Yöneticisi: Dr. Yeşim Çilesiz

Aralık 1996

Bu çalışmada, reel döviz kurları, göreceli servet, göreceli ücretler ve Türkiye'ye giren doğrudan yabancı sermaye yatırımları arasındaki ilişki incelenmiştir. Türkiye'ye 1986-1995 yılları arasında sekiz ülkeden giren yabancı sermaye yatırımları üzerinde sabit efekt regresyonlar kullanılmıştır. Sonuçlar göstermektedir ki, Türk lirası değer kaybettiğinde, Türkiye'deki ücretler diğer ülkelere göre göreceli olarak arttığı ve servet diğer ülkelere göre azaldığında ülkeye giren doğrudan yabancı sermaye yatırımlarında artış olmaktadır.

Anahtar Kelimeler: Yabancı Sermaye, Reel Döviz Kurları, Göreceli Servet, Göreceli Ücretler

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1. INTRODUCTION

Foreign direct investment (FDI), defined as cross-border expenditures to acquire or expand capital and to control productive assets, has long been a subject of interest. This interest has been renewed in recent years for a number of reasons. One of them is the rapid growth of global FDI flows. Another reason is the recent sharp increase in FDI inflows into the United States, which has caused some concern about the causes and consequences of such an expansion in foreign ownership. A third reason is the possibility offered by FDI for channeling resources to developing countries. Although FDI has not been a significant component of total capital inflows into developing countries, its relative importance may increase as these countries have quite limited access to other sources of financing.

Accordingly, this will be a study on the inward FDI in Turkey, which is considered a developing country, and its relationship to real exchange rate changes together with relative labor costs and relative wealth.

International investment in less developed economies is not new. Even in the 19th century, the Industrial Revolution not only resulted in massive worldwide expansion of trade, but also in significant increases in the flow of investment capital from industrialized countries to many less developed regions of the world. This trend

continued until World War I, when a general contraction of international investment flows occurred. After that, the Great Depression and the Second World War discouraged direct investment further. The postwar period stands out in the history of international investment on at least two counts. First, the volume of international investment in developing countries grew very rapidly, surpassing by far the period prior to World War I. Second, it took the form of direct private investment. The rapid growth of multinational, often US based firms, through the establishment of majority or wholly-owned subsidiaries in developing and developed countries during the 1950's and 1960's was the next step in the history of FDI. In the 1970's and the 1980's the rapid expansion of international investment continued. Although investment in developing countries was showing an upward trend, it was increasingly concentrated within the Triad regions, the European Union (EU), Japan, and the United States. The developed countries could not invest in developing countries because their governments were against FDI inflows to their countries. That was due to the fact that FDI was claimed to be a tool of capitalism, a way of getting scarce resources and exploiting cheap labor in the host country. Even governments were discouraging foreign investors by special regulations until the 1980's. In the 1990's, however, FDI flows to developed countries declined, while those to developing countries, (especially Asia and Latin America) increased as a result of the continuing efforts for liberalization and privatization that started in the 1980's. This trend has also been evident in some other developing countries in Central and Eastern Europe and Turkey, where inflows continue to grow. Perhaps the only exception is Africa, where extensive liberalization efforts do not seem to influence FDI flows.¹

¹ For detail see *New Forms of International Investments*, Charles Oman, OECD, 1984

Today, most developing countries compete with one another to attract foreign investments. This change in attitude is simply due to the fact that they have realized the benefits. Developing countries need capital, and foreign investment provides foreign finance opportunities for their domestic investments. Inward FDI to developing countries transfers technology, managerial skills, and in most cases, provides competitive advantage to the host country.

FDI might take different forms, such as mergers and acquisitions of existing facilities in the country where the investment is made, establishment of foreign plants in the host country, plant expansions of foreign investors, real estate investments, joint ventures and equity increases. Inflow of FDI into developing countries depends on various factors in both the host and the home countries.

Investing companies, especially those from developed countries, look for competitive advantage when investing abroad. This can be in better technology, economies of scale and scope, tax advantages, minimizing costs of production or getting access to natural resources etc. All of these factors have one point in common. They offer higher profits to the investing companies, than what is available in their own country. Developing countries have three very important advantages for investors: Low labor costs, cheap energy and raw materials, tax incentives. If these advantages outweigh other costs such as transportation and construction abroad, a company may prefer to invest in a developing country where higher profits are provided.

2. LITERATURE SURVEY

There is as of yet no well-developed and generally applicable foreign direct investment theory including all the factors listed above. Whatever empirical work has been published, is usually related to one or several of the components of the theories of FDI. Since this study will involve “real exchange rates, relative wealth, relative wages” as factors that influence the inward FDI in Turkey, the survey will be in three parts as well, and confined to the related literature only.

2.1 The Real Exchange Rate and Foreign Direct Investment

Exchange rate movements are an important determinant on internationally traded assets; hence, anticipated movements on currency values play a significant role in determining international capital transactions. An asset is defined as a claim to a stream of domestic currency denominated profits. Therefore, if there is a change in the real exchange rate value of the currency between the time an international investment takes place, and the time it pays back, actual profits will diverge from expected ones. Consequently, expected exchange rate movements are an important component for the investor in his decision making.

Kohlhagen (1977) studies the relationship between FDI and exchange rates. The model he develops indicates that, according to the product location, it is profitability that is affected by exchange rate changes, not foreign or domestic prices. A devaluation occurring in the host country will have a negative effect on FDI.

Cushman (1988) empirically analyzes the effects of exchange rate uncertainty on FDI in the United States. He concentrates only on the effects of changes in exchange rate risk, and summarizes the outcome as follows: an increase in the exchange rate risk will increase the cost of capital, and hence will lead the firm to use less capital, which will decrease FDI.

Caves (1988) presents additional evidence regarding the relationship between exchange rate levels and FDI. First, changes in the exchange rate level will alter the attractiveness of a foreign firm as it changes the costs and revenues. Second, an expectation of appreciation, after a depreciation of local currency takes place, will encourage FDI inflows.

Campa (1993) states that the level of foreign capital entry depends on the level of exchange rate, variance of exchange rate, and sunk and variable costs. The results indicate that an increase in exchange rate volatility or uncertainty will reduce the number of firms entering the country. Also, when there is a home currency appreciation, the country becomes a more expensive place to produce, so a decrease in FDI will be observed. Finally, increases in sunk and variable costs deter entrance into the country.

McCulloch (1993) considers trade barriers and exchange rates to be the two most important factors determining FDI. In a theoretical model, he finds that exchange rate movements are an important determinant of the rate of return on many types of internationally traded assets, since they affect production costs and profits for investments abroad. Therefore, anticipated and expected movements in currency values play a significant role in international capital transaction decisions.

2.2 Relative Labor Cost and Foreign Direct Investment

As far as developing countries are concerned, availability of cheap labor can be expected to be an important determinant of FDI. Differences in labor costs between the source and the host country will influence profits directly. Consequently, when the average income of workers in the source country is high, investors from developed countries look for opportunities to produce outside their borders. As the flow of investment towards developing countries expanded after the 1970's, studies that stressed this kind of relationship between labor costs and FDI began to emerge.

Riedel's (1975) empirical study on Taiwan shows that relatively lower wage costs have been one of the major causes of export oriented FDI expansion in that country. Similar conclusions are reached by Donges (1976,1980) in the case of Spain and Portugal.

Agrawal's (1980) study shows that a higher increase in labor costs in Germany relative to that in Brazil, India, Iran, Israel, Mexico, and Nigeria led to a higher flow of FDI from Germany to those countries. Similar conclusions are reached by Juhl (1979) at

the sectoral level for German investments in Colombia, Ecuador, El Salvador, and Mexico.

Schroeder (1986) conducts a survey among German firms, and finds that 20 % of them declared to have undertaken FDI in developing countries in order to achieve lower production, particularly labor, costs.

Agrawal (1989) gives mixed results on the relationship between labor costs and FDI. While Japanese FDI in developing countries was responsive to labor costs, the same is not observed for FDI originating in the United States, West Germany, and the United Kingdom. According to a comment on the results given by Agrawal, “the study consists of Pacific-rim developing countries where wage costs rose considerably during 1980’s. But it might also be possible that increasing robotization of production processes has generally reduced the importance of low skilled human labor”.²

2.3 Relative Wealth and Foreign Direct Investment

The studies about relative wealth effects are all built on the idea that when there are informational asymmetries about an asset’s payoff, if a company seeking investment opportunities abroad is wealthier than its competitors in the host country, then it is easier for that company to bid more for plants, etc. Alternatively, a host company will find it beneficial to merge with the wealthier company. This relationship between wealth and FDI might have a linkage with exchange rates simply because if a foreign

² Comments on the study by J.P. Agrawal, A. Gubitz, and P. Nunnenkamp, *Foreign Direct Investment in Developing Countries The Case of Germany*, Tübingen Mohr, 1991

company holds its wealth in the source country currency, when the home currency depreciates in real value against the source country currency, this will increase its relative wealth position and hence decrease its relative cost of capital. Thus, it will be able to finance its investment more easily than its competitors in the home country. For a developing country that is interested in attracting FDI, all source country companies are better off when its currency depreciates against the source country currency.

This is the logic that Froot and Stein (1991) use when they argue that the wealth positions of agents will affect their demand for investment under the condition of imperfect capital markets. They suggest that even increases in foreign wealth that are independent of exchange rates generate increases in FDI.

Grieco (1986) examines four major theoretical approaches. One of those, the Bargaining Approach, suggests that a distribution of gains emerges from negotiations between foreign firms and host-country governments. Wealthier companies earn the right to invest in the host country because of their strong financial positions.

Also Klein and Rosengren (1994) find strong empirical evidence that relative wealth significantly affects US inward FDI. They argue that wealth of firms relative to their counterparts rises with currency appreciation. When there are capital market imperfections, changes in wealth affect the bids they make when the purchase of an asset requires internally provided funds. Besides, they suggest that country specific productivity shocks may result in a decrease in relative wealth together with FDI outflows. They also try to see the relationship between relative labor costs and FDI. They include relative wages of the countries in their analysis together with relative

wealth. However, they find that relative wages do not have a significant impact on the determination of US FDI.

The method used in the analysis of the effect of the real exchange rate changes, relative labor costs, and relative wealth on the inward FDI in Turkey is based on the model proposed by Klein and Rosengren (1994). Before discussing the methodology and evaluating the results, we present a short history of FDI flows to Turkey.

3. FDI IN TURKEY

1838 Trade Agreements with European countries, especially England, constituted the introduction of FDI in the Ottoman Empire. Historically, capitulations (special laws only valid for the foreigners), and foreign debt are what paved the way for FDI.

Foreign companies that were empowered through Capitulations brought their capital to make great profits, and after a short period of time pulled it back without facing any barriers. This is why Turkey became hesitant about foreign investors after 1923.

Especially the companies that were active in the public sector were nationalized in a 16 year period by paying indemnity. Accordingly, until the 1950's, significant foreign direct investment flows were not observed.

The importance of FDI in development was recognized in Turkey in the post-World War II period, when economic liberalization efforts became important in most developing countries and increasingly liberal FDI laws were enacted.

Laws enacted in 1950 during the İnönü regime were very limited in scope and by no means effective in promoting FDI inflows, but they did demonstrate Turkey's new willingness to accept foreign investments. After Menderes came to power in 1951, the FDI related laws became a little broader in scope and started to serve more effectively as FDI promoting instruments. Despite these efforts, the results were not satisfactory.

This might have been due to the fact that foreign investors needed time to obtain knowledge about geographic, economic and political conditions in Turkey to make their decisions, but it was also a possibility that the laws in question actually became obstacles for investors. The laws and regulations were subject to wide-ranging political and bureaucratic interpretations especially in terms of Art. 1, Clause (a), that FDI had to “benefit the economic development of the country”. There was no law or regulation which could answer the questions “How?” and “According to which criteria and to what extent?” about this statement.

This explains the Turkish government’s rationale in inviting C. B. Randall, an American expert, to prepare a new liberal FDI law (Law 6224). The new law was enacted in 1954 and is still in effect with only minor changes. With this law, Turkey became attractive for FDI, at least in terms of legal framework.

Table 3.1
Authorized FDI through 1951-1990 (billion TL)

1951	1955	1960	1965	1970	1975	1980	1985	1990	1995
0.05	0.49	0.49	0.93	1.52	2.89	76.87	1168.16	18249.28	328447.82

The authorized FDI inflows in the 1950-1980 period are shown in Table 3.1. During this period, we see only a slight increase in FDI flows, although the values that are presented are nominal and inflation is present. After 1980, however, dramatic increases are observed. This is due to the comprehensive economic stabilization and liberalization program prepared by Turgut Özal and instituted in January 1980. Both Özal and his program were retained after the Demirel government was overthrown by the military on September 12, 1980. In the same period, we can also observe that there

is an acceleration in the depreciation of the Turkish lira which can also attract FDI inflows. This accelerated depreciation is the result of the transition from fixed exchange rate to flexible exchange rate regimes in the early 1980's. In the fixed exchange rate period, it is well known that the Turkish lira was usually overvalued. This might have decreased capital inflows from other countries.

The relationship between the nominal exchange rate (TL/\$) and FDI inflows to Turkey is illustrated in Figure 3.1. Although there is a general increase in FDI every year, it is interesting to see a drop in 1994 when the country went through a severe economic crisis. To put the distorted balances back into track again, the government prepared the April 5 stabilization package. One of the aims of the package was the control of the rise of dollar-TL parity. Although the package led to improvements in restoring money balances it actually increased unemployment and slowed down real growth. There, we see that political or economic crisis in a country, war conditions

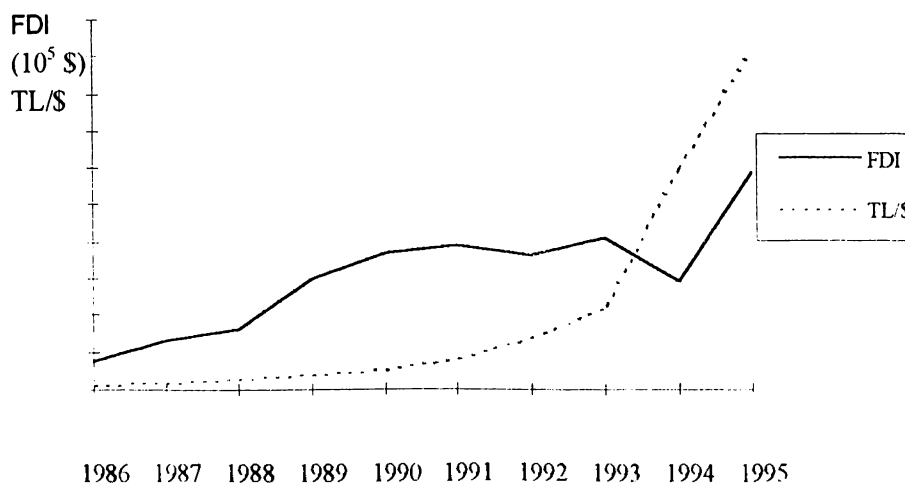


Figure 3.1

Foreign Direct Investment Inflows to Turkey and Nominal Exchange Rate

alter the investment decisions of foreigners. Although a depreciation of the home currency should increase foreign investment, the instability leading to the delay of decisions following crisis conditions prevents an immediate increase in FDI inflows. However, we can still conclude from Figure 3.1 that FDI inflows and the nominal exchange rate (TL/\$) seem to have a positive correlation.

There were great expectations that, due to low labor costs, Turkey would face a boom in FDI inflows similar to that in the Far East Asian countries. However, the above observations reveal that although the cost of labor may be a determining factor in foreign investment decisions, foreign investors are affected by some other factors as well.

4. METHODOLOGY

4.1 An Overview of the Data

The central aim of this study is to find out whether real exchange rates, relative wages, and relative wealth had significant effects on Turkey's inward foreign direct investment during the period 1986-1995. The source countries in the study are United States, Germany, France, Netherlands, United Kingdom, Switzerland, Italy, and Japan. These countries are chosen because together, they represent the source of 82% of all foreign direct investment inflows to Turkey during the time period of the sample. The choice of the time period is due to the fact that the Istanbul Stock Exchange total index, which is used in the evaluation of the relative wealth effect, one of the three independent variables in the model, is available only after 1986.

The foreign direct investment data is obtained from the Foreign Trade Undersecretariat. The type of foreign direct investment is not given, but as there is only one set of figures, it is reasonable to assume that all types of foreign direct investment are included. Source country specific characteristics of Turkey's inward foreign direct investment are provided in the following tables. Table 3.2 provides foreign direct investment summary statistics. In this table the minimum, the maximum, and average values over the period 1986-1995 for each country (measured in million dollars) are

presented. It is seen that France is the largest investor, U.S. the second, Netherlands the third, but with the lowest investment in the sample period in 1986.

Table 4.2 presents cross country correlations of foreign direct investment. All correlations are positive, which means that Turkey became attractive for all source countries in the data through the years 1986-1995. Countries within Europe seem to have a higher correlation with each other than they do with the United States and Japan. The only exception is Italy, which shows an opposite trend:

Table 4.1

FDI outlays by country (1986-1995), million \$

	France	USA	Netherlands	Germany	Switzerland	UK	Italy	Japan
Minimum	8.31	24.53	2.4	45.26	53.29	22.83	4.83	2.63
Maximum	669.06	460.87	559.32	392.13	327.75	286.41	419.29	283.84
Average	254.503	177.713	176.038	168.911	137.7	134.166	117.374	109.784

Table 4.2

Cross-country correlations of FDI

	France	USA	Netherlands	Germany	Switzerland	UK	Italy	Japan
France	1							
USA	0.376	1						
Netherlands	0.491	0.643	1					
Germany	0.644	0.567	0.940	1				
Switzerland	0.602	0.391	0.835	0.815	1			
UK	0.655	0.084	0.109	0.230	0.496	1		
Italy	0.237	0.615	0.361	0.311	0.190	0.015	1	
Japan	0.444	0.324	0.638	0.718	0.638	0.280	0.561	1

low correlations with European countries, high with Japan and the United States. Also, no higher correlation is observed between Japan and the United States when we compare their correlations with European countries. We can conclude from Table 4.2

that regions and distances are somewhat important determinants in making foreign investment decisions.

The wage data is obtained from Internationale Übersichten Statistisches Jahrbuch 1996, (International Statistics Overview Yearbook, 1996), Germany. Average daily wages are available in only machine, textile, wood, electrical, and chemical industries. It would be much better to include more industries and service sector average wages in the regression analysis as the industries that constitute the wage data make up only about 30% of all FDI inflows to Turkey. We do not expect this to lead to misleading results, however, since wage changes in manufacturing and service sectors are not dramatically different from one another.

The source of the stock index data is the same as that of the relative wage data. The data for Turkey is obtained from the Capital Markets Board Annual Reports. The Overall Index is taken for each country.

The exchange rate data is taken from the Central Bank of the Republic of Turkey. The real exchange rate values are calculated by using Consumer Price Indices which were obtained from the International Financial Statistics Yearbook of IMF.

4.2 Fixed Effect Regression

The foreign direct investment inflow data we have from eight countries for ten years, is an example of panel data. We have observations from each country for the same time periods. In a particular year, something might have happened which alters the data for

every country in that year. Similarly, each country might have characteristics of its own that effect its data throughout the entire time period. Both effects may be negligible but they may also influence the results considerably. Therefore, we will use the fixed effect model that is appropriate in cases where the “population is sampled exhaustively (e.g., data from geographic regions over time)”³

This method allows the intercept to vary across individuals, across time, or across both time and individuals. This can be done either by using dummy variables, which yields estimates for the different intercepts, or by taking the deviations of the regressors from their time or individual mean, in which case the intercepts are fixed but unknown.

Through the use of this regression method, we aim to account for time specific and/or country specific factors that might distort the effects of the variables in the model.

4.3 Regression Model

In the equations (1) and (2) “i” stands for country index and “t” for the time period. A regression analysis on Equation (1) (parsimonious model) will give the extent of the relationship between inward FDI from eight countries to Turkey and real exchange rates of the Turkish lira vis-à-vis the currencies of the corresponding countries. The regressand will be the natural logarithm of the annual inward FDI divided by the nominal GNP of Turkey. Using the nominal values of GNP as a deflator will control for changes in both the price level and the size of the Turkish economy.⁴ The real exchange rates are the ratio of the consumer price index of Turkey to the Turkish lira

³ L. Matyas, P. Sevestre. *The Econometrics of Panel Data-Handbook of Theory and Applications*. Kluwer Academic Publishers. 1992

⁴ M.W. Klein, E. Rosengren. *The Real Exchange Rate and Foreign Direct Investment*. *Journal of International Economics* 36. 1994

value of the source country consumer price index. The regression will be run with and without trend terms using annual data. The time trend allows us to control for the increasing presence of foreign ownership in Turkey.

$$\ln \frac{FDI_t^i}{GNP_t^{Turkey}} = \beta \ln \frac{P_t^{Turkey}}{E_t^i P_t^i} + Trend_t^i + \varepsilon_t^i \quad (1)$$

The regression results obtained from Equation (2) (full model) will show whether relative wages and relative wealth have a significant effect on inward FDI flows when they are considered to be regressors together with real exchange rates. The regressands and real exchange rates will be the same as in Equation (1). The relative wage term is the ratio of average earnings in Turkey over the average wages in the source country. The relative wealth term is the ratio of the ISE index to the source country stock index. Just like in the first regression analysis, there will be one regression run with the trend term and one without.

$$\ln \frac{FDI_t^i}{GNP_t^{Turkey}} = \beta_1 \ln \frac{P_t^{Turkey}}{E_t^i P_t^i} + \beta_2 \ln \frac{W_t^{Turkey}}{W_t^i} + \beta_3 \ln \frac{S_t^{Turkey}}{S_t^i} + Trend_t^i + \varepsilon_t^i \quad (2)$$

Time trend terms in both equations are introduced because short time series like the panel data of 10 annual observations in our case provide insufficient data for determining long-run statistical properties of the time series.⁵

⁵ M.W. Klein, E. Rosengren, The Real Exchange Rate and Foreign Direct Investment, *Journal of International Economics* 36, 1994

The regressions were run four times for each of the equations. First, without considering any time or individual effects, then separately, with time and individual effects, finally, with both time and individual effects.

5. RESULTS

Performing the regressions on the differences of the variables from their mean value is equivalent to using dummy variables to allow intercepts to vary. However, we should then correct the degrees of freedom of the sum of squares terms in the results we obtain from the regression analysis. This correction leads also to corrected sum of squares, F, t, and R^2 values. We will report the corrected values in our tables. The results in Table 5.1 confirm the predicted relationship between real exchange rates and FDI inflows from eight countries.

Table 5.1
Regression Results of Equation (1) (parsimonious model)

Regression Type	Coefficients		Adj. R^2
	ln(real exchange rate)	Trend	
No effects ^b	-7.81349E-05 ^a		0.0391
No effects ^c	-7.95617E-05 ^a	0.000395417 ^a	0.1340
Time effects ^{b, c}	-7.90639E-05 ^a		0.1540
Time effects ^c	-7.90639E-05 ^a	2.04525E-20	0.1444
Individual effects ^b	4.53035E-05		0.0899
Individual effects ^c	-5.55569E-05	6.89666E-05	0.0983
Time. Ind. effects ^b	-0.001153363		0.0994
Time. Ind. effects	-0.001153363	-3.20297E-19	0.0892

^a Significant at the 5 percent level

^b White (1980) test indicates heteroskedasticity at 0.05 significance level.

^c The hypothesis of uncorrelated error terms is rejected.

The results for two of the regressions, the no effects and time effects regressions, are significant at the 5 percent level. For the individual effects and individual and time

effects regressions, the results are not significant at the same level. The negative sign of the coefficient means that a real depreciation (appreciation) of the Turkish lira is correlated with an increase (decrease) in the inflow of FDI into Turkey. The only positive sign can be observed for the individual effects regression without a trend term, which is not significant at the 5 percent level. The only trend term which is significant is that in the no effects model.

In Table 5.2 we present the estimated relationship between inward FDI and real exchange rates, relative wages, and relative wealth.

Table 5.2
Regression of Equation (2) (Full Model)

Regression Type	Coefficients				Adj. R ²
	ln(real exchange rate)	ln(relative wages)	ln(relative wealth)	Trend	
No effects	-7.83797E-05 ^a	0.000235968 ^a	-0.000119444 ^a		0.1177
No effects	-8.27543E-05 ^a	0.000224973 ^a	-0.000502899	0.000952694 ^a	0.1762
Time effects ^c	-7.46859E-05 ^a	0.001219451	-0.00030145		0.1595
Time effects ^c	-7.46859E-05 ^a	0.001219451	-0.00030145	1.40625E-19 ^a	0.1498
Individual effects	-0.000234763	0.000192245	-6.39616E-05		0.1672
Individual effects	-0.000244785	0.000192223	-7.19604E-05	1.9545E-05	0.1589
Time, Ind. effects	-0.001070219	0.003878238	0.000327917		0.1075
Time, Ind. effects	-0.001070219	0.003878238	0.000327917	-5.77734E-19	0.0971

^a Significant at the 5 percent level

^c The hypothesis of uncorrelated error terms rejected

The coefficient of the real exchange rate is negative in all regressions indicating that a real depreciation (appreciation) of the Turkish lira increases (decreases) FDI inflows.

This coefficient is significant at the 5 percent significant level in the no effects and time effects models. The only other significant relationships are found between relative wages and inward FDI in the no effects regressions with and without a trend term, and between relative wealth and FDI in the no effects regression with a trend term. The coefficients for relative wages all have a positive sign whereas those for relative wealth

have a negative sign except for the time and individual effects regressions. Trend coefficients are significant only in the no effects and time effects models.

If the fixed effect regression model is used, then the following hypothesis tests should be applied to the results in order to see if:

Test 1. individual and time effects are both significant

(Ho : There are no individual and time effects)

Test 2. time effects are significant

(Ho : There are no time effects)

Test 3. individual effects are significant

(Ho : There are no individual effects)

Table 5.3
Hypothesis test results for level of significance 0.05

	Parsimonious Model						Full Model					
	With Trend			Without Trend			With Trend			Without Trend		
	F cal.	F cri.	Result	F cal.	F cri.	Result	F cal.	F cri.	Result	F cal.	F cri.	Result
Test 1	1.28	2.5	Fail to reject	1.55	3.13	Fail to reject	1.74	2.73	Fail to reject	2.26	3.98	Fail to reject
Test 2	2.24	2.5	Fail to reject	2.90	3.13	Fail to reject	2.29	2.73	Fail to reject	3.16	3.98	Fail to reject
Test 3	1.16	2.5	Fail to reject	1.17	3.13	Fail to reject	1.18	2.73	Fail to reject	1.19	3.98	Fail to reject

We see from Table 5.3 that none of these hypotheses can be rejected. That is, we can not talk about time or individual effects for our sample. The F-values that are close to the critical values are the ones for the test of time effects. This supports the argument

that the situation in Turkey in a given time period is a more important determinant of investment decisions of source country companies than foreign country policies.

We will next use the White (1980) test to test the presence of heteroskedasticity in all the regressions.⁶ According to the results of the test presented in Appendix C, among the sixteen regressions run, in only four of them, the no effects regression, time effects regression, individual effects regression and both effects regression without the trend term, of the parsimonious model, the test indicates heteroskedasticity at the 5 percent significance level.

The result of autocorrelation tests applied to the residuals are presented in Appendix D. This test is conducted to investigate existence of correlation between observed values over time. In time series data autocorrelation is usually present, resulting in instability of the regression coefficient estimates and bias in the individual test results. Here the Ljung-Box test for autocorrelation is applied. “This statistics is a function of the residual autocorrelations and is designed to test the hypothesis that the theoretical autocorrelation function of the noise of the fitted model is equal to zero at all lags except lag zero”.⁷ According to the results presented in Appendix D, in all four time effect regressions (of both the parsimonious and full models), the individual effects regression with the trend term, and the no effects regression without the trend term, the hypotheses of uncorrelated errors are rejected at the 1 percent significance level. In the remaining ten regression analysis that were performed, we fail to reject the same hypothesis at that significance level.

⁶ H. White. A Heteroskedasticity-Consistent Covariance Matrix Estimator and a Direct Test for Heteroskedasticity. *Econometrica* Vol.48, No.4, 1980

⁷ Robert B. Miller. *Minitab Handbook for Business and Economics*. PWS-Kent Publishing Company 1988. pp. 243-246

6. CONCLUSION

In this study, we found a negative relationship between the real exchange rate and foreign direct investment inflows to Turkey. Except in the individual effects regression of FDI flows on only the real exchange rate without a trend term, we confirmed our hypothesis that a depreciation (appreciation) of the Turkish lira increases (decreases) the inflow of FDI to the country. It is interesting to observe, however, that in all the regressions an increase (decrease) in Turkish wages relative to the corresponding source country wage, is associated with an increase (decrease) in FDI inflows, although this result is not significant. Relative wealth (stock indices), on the other hand, is inversely related to FDI inflows in most regressions, but regressions with both time and individual country effects suggest the opposite conclusion. These results underline the problem about the data set used in estimations. Eleven year FDI data for a developing country with an unstable economy is in fact not sufficient. A longer period of data is needed to yield a meaningful systematic relationship between FDI and the variables in the regression. Besides, in this short period of time, there was a severe crisis which could alter the situation dramatically.

Only one of the regressions yields a positive relationship between the real exchange rate and FDI inflows, but like all other individual effects regressions, this is not significant. The most unusual result is the positive relationship between labor costs and

FDI inflows. The reason may be the nature of the data we used for the wages. The FDI data includes every manufacturing and service sector whereas the wage data is from only some sectors in manufacturing. The sectors that are used for the wage data form only about 20-30% of all foreign investment in the sample period, which might give us misleading results.

Another problem arises from the difference between wages in Turkey and the source countries. The data includes qualified and other workers, which means that if a wage increase for qualified workers occurs and other wages remain more or less the same, then there will be an overall increase in wages in that country. Therefore, in order to find out if wage increases in Turkey also increase FDI inflows, the sectors invested and their labor needs should be investigated in more detail. Also, the profits that the foreign investors obtain should be examined in order to derive a conclusion about the FDI-relative wage rate relationship. Foreign investors might be willing to pay more for the workers in the country that they want to invest in than what they are paying for their workers in their home country if they make more profits, or pay less taxes.

As foreign firms become stronger in terms of financial position and wealth relative to host country companies, it is expected that they will have more power to invest in the host country. This gives rise to the negative relationship between relative wealth and FDI. The positive relationship observed between FDI and relative wealth in the both effects regression model can be due to political and economical uncertainty during the sample period. That is also most probably the reason why the relationship between wealth and FDI, and labor cost and FDI is not significant in the overall analysis. The source country companies in the sample have the opportunity to make investments in a

number of other countries and their decisions also depend on factors like uncertainty in addition to the independent variables we have considered. As the other variables are not controlled in this study, it is possible that our results do not reflect the actual situation. Relative interest rates, distances of the source countries to potential host countries and transportation costs, relative sizes and growth rates of the markets the companies want to enter, sector profitabilities, relative energy costs are only some of the examples of other factors influencing FDI flows. A more detailed study where some of these factors can be added as regressors to those currently used in the analysis should yield more reliable results.

Since we have found that fixed effects are not significant for our panel data, we should concentrate on the results obtained from the no effects regressions. Those indicate that the real exchange rate and relative wealth have a negative relationship with FDI, whereas relative wages have a significant positive relationship in the regression without a trend term. The only relationship that is not significant is the one between wealth and FDI in the regression without the trend, but it still has the anticipated sign.

In the fixed effects regressions, all effects turn out to be insignificant although the F-values for time effects happen to be closer to the corresponding critical values than others. Thus, we can conclude that the investor country conditions are a less important determinant of company decisions than the situation in Turkey. This is also supported by most economic theories of foreign direct investment where the focus is usually on the economy receiving the investment, not on the conditions of the firm making the investment.

When we compare the results of our analysis with those of Klein and Rosengren, we see that they are similar for the relationship between relative wealth, the real exchange rate and FDI. However, a difference is observed in the relationship between relative labor costs and inflow of FDI. Klein and Rosengren consistently obtain a negative coefficient for the relative wage variable even though sometimes the coefficient is not significant at the 5 percent level. Although we have done a similar study on inflow of FDI to Turkey, it is reasonable not to have obtained similar results in this respect. Country specific risk is one explanation of the difference. Also, the reasons for investing in a developing country and in a developed one are different, which may cause us to make misleading comparisons. The studies about FDI inflows to the United States usually aim to find out why there is an increasing trend of foreign investment, whereas the studies about developing countries focus on the competition in attracting investments and the ways to increase FDI inflows in order to match the FDI flows in some East Asian countries.

Should Turkey want to attract more FDI inflows to contribute to its economic growth, it has to build a stable political and economical environment. Otherwise, the liberalization efforts in the recent years will not produce increases in FDI inflows.

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APPENDIX A.

Regression Data

TIME EFFECTS

ln (FDI/GNP)- Mean value in year t	ln (Real Exchange Rate)- Mean value in year t	ln (Relative Wage)- Mean value in year t	ln (Relative Wealth)- Mean value in year t	ln (t)
6,84194E-05	-1,983102967	0,01689901	0,11250578	0
0,000421239	-1,118825345	-0,002519076	0,053280478	0
-0,000207641	-0,249173632	0,007142835	-0,082023055	0
-0,000308228	-1,015278017	0,01689901	0,092889616	0
0,000557908	-1,338872824	-0,002519076	0,137376697	0
-0,00026687	4,89160832	-0,012088527	-0,504092319	0
3,94858E-05	-2,462681235	-0,030957011	0,129286038	0
-0,000304313	3,2763257	0,007142835	0,060776765	0
-6,34551E-05	-1,86771553	0,034925445	-0,0138702	0,693147181
0,000594335	-1,155636474	-0,002814883	0,235203381	0,693147181
-0,000476661	-0,271110225	-0,002814883	-0,123242757	0,693147181
-0,000664496	-1,043051538	0,034925445	0,194929482	0,693147181
0,000253543	-1,384727176	0,00648751	0,21921583	0,693147181
-0,000875976	4,859353467	-0,039182527	-0,246018315	0,693147181
0,000550443	-2,466486129	-0,056882104	-0,042355098	0,693147181
0,000682267	3,329373606	0,025355994	-0,223862323	0,693147181
0,000602681	-1,845016907	0,044472911	-0,012233486	1,098612289
0,000203318	-1,122941483	-0,010086073	0,324915569	1,098612289
-0,000618399	-0,23903329	0,007771544	-0,104586907	1,098612289
-0,000269417	-1,00706089	0,044472911	0,19863791	1,098612289
0,000400303	-1,35153219	0,007771544	0,204503029	1,098612289
-0,00066282	4,878177572	-0,053382879	-0,219830563	1,098612289
0,000601262	-2,528755484	-0,09488261	-0,009523458	1,098612289
-0,000256928	3,216162672	0,053862651	-0,381882094	1,098612289
-0,000237936	-1,917694193	0,064897027	0,014859377	1,386294361
-0,000322581	-1,110911441	-0,005307232	0,281441277	1,386294361
0,001003659	-0,233753769	0,020445264	-0,261394	1,386294361
-8,6247E-05	-0,976341463	0,064897027	0,177840551	1,386294361
0,000146851	-1,300456406	0,020445264	0,218277327	1,386294361
-0,00105708	4,84043723	-0,070904515	-0,10105135	1,386294361
0,001615849	-2,545678711	-0,132462408	0,024445016	1,386294361
-0,001062516	3,244398754	0,037989574	-0,354418199	1,386294361
-0,000443724	-1,819936147	0,084017012	-0,034016442	1,609437912
-0,000324448	-1,141656696	-0,008098277	0,006119097	1,609437912
0,003134697	-0,279011315	0,032723718	-0,21978765	1,609437912
-0,001063445	-1,006251236	0,084017012	0,208451382	1,609437912
-0,000444385	-1,373104271	0,016194416	0,279333377	1,609437912
-0,000853521	4,792952616	-0,085059318	-0,102832087	1,609437912
0,000604704	-2,577755741	-0,156518282	0,047933098	1,609437912
-0,000609878	3,404762791	0,032723718	-0,185200776	1,609437912
0,001704196	-1,834838269	0,11430713	-0,206305923	1,791759469
-3,33686E-05	-1,117860955	-0,013868063	0,190575441	1,791759469
0,000313343	-0,242494237	0,040199158	-0,2338812	1,791759469
0,000517808	-0,978301502	0,105796441	0,140565021	1,791759469
-0,000607147	-1,361098661	0,008946615	0,229435859	1,791759469
-0,00013685	4,794989325	-0,120731209	0,022562277	1,791759469

-0,000792822	-2,590959843	-0,166944052	-0,085606243	1,791759469
-0,000965159	3,330564143	0,032293979	-0,057345231	1,791759469
6,57992E-05	-1,794014697	0,135435576	-0,329805282	1,945910149
9,63391E-05	-1,152223638	-0,018715104	0,20482087	1,945910149
0,001037354	-0,265133841	0,047729995	-0,35510209	1,945910149
0,000534472	-1,005742216	0,102645753	0,073981269	1,945910149
0,00010287	-1,358275768	0,010272433	0,144322759	1,945910149
-0,000418672	4,807246985	-0,126928689	0,187058414	1,945910149
-0,000482862	-2,555436009	-0,183018155	-0,148910678	1,945910149
-0,000935301	3,323579183	0,03257819	0,223634739	1,945910149
0,00019043	-1,86062465	0,138438666	-0,262305021	2,079441542
-0,000374882	-1,166599558	-0,039809566	0,28910826	2,079441542
5,2135E-05	-0,248463223	0,052783221	-0,317788	2,079441542
-0,000187945	-1,008536966	0,098592757	0,036554866	2,079441542
-0,00042572	-1,374828392	0,016149088	0,014057935	2,079441542
0,001128955	4,972222857	-0,130781344	0,190886133	2,079441542
-0,000511475	-2,450612244	-0,173340958	-0,175476249	2,079441542
0,000128502	3,137442177	0,037968135	0,224962075	2,079441542
4,18195E-05	-1,829708869	0,132731592	-0,142270529	2,197224577
0,000538923	-1,170462217	-0,048266338	0,155218074	2,197224577
0,000781827	-0,241001092	0,063738721	-0,201353131	2,197224577
0,000314257	-1,0115176	0,093816176	-0,163612803	2,197224577
-0,000752065	-1,413380647	0,027371077	0,028256451	2,197224577
8,51653E-05	5,006294593	-0,148980313	0,069763925	2,197224577
-0,000804492	-2,442937005	-0,15495048	-0,085202748	2,197224577
-0,000205435	3,102712837	0,034539566	0,33920076	2,197224577
-0,000507504	-1,765766371	0,123558699	-0,309228029	2,302585093
0,000453126	-1,211791939	-0,063839011	0,158898517	2,302585093
0,000954594	-0,265098215	0,042928964	-0,208786468	2,302585093
0,001452179	-1,055818007	0,115954099	-0,0579136	2,302585093
6,84201E-05	-1,477893418	0,042928964	-0,007518651	2,302585093
-0,001301057	5,063698443	-0,154535573	0,051574075	2,302585093
-0,000925792	-2,409823885	-0,142907535	-0,119297421	2,302585093
-0,000193966	3,122493393	0,035911392	0,492271577	2,302585093

INDIVIDUAL AND TIME EFFECTS

ln (FDI/GNP)- Mean value in year t- Mean value of country n	ln (Real Exchange Rate)- Mean value in year t- Mean value of country n	ln (Relative Wage)- Mean value in year t- Mean value of country n	ln (Relative Wealth)- Mean value in year t- Mean value of country n	ln (t)
-7,36532E-05	-0,131261107	-0,072069297	0,230772756	0
-0,000205528	-0,01587367	-0,054042861	0,104396775	0,693147181
0,000460608	0,006824953	-0,044495396	0,106033489	1,098612289
-0,000380008	-0,065852333	-0,02407128	0,133126352	1,386294361
-0,000585797	0,031905713	-0,004951295	0,084250534	1,609437912
0,001562123	0,017003591	0,025338824	-0,088038948	1,791759469
-7,62734E-05	0,057827163	0,046467269	-0,211538307	1,945910149
4,83569E-05	-0,00878279	0,049470359	-0,144038045	2,079441542
-0,000100253	0,022132991	0,043763285	-0,024003554	2,197224577
-0,000649576	0,086075489	0,034590392	-0,190961053	2,302585093
0,000296039	0,028065629	0,018813286	-0,136677619	0
0,000469135	-0,0087455	0,01851748	0,045245285	0,693147181
7,81181E-05	0,023949491	0,011246289	0,134957473	1,098612289
-0,000447781	0,035979534	0,01602513	0,091483181	1,386294361
-0,000449648	0,005234279	0,013234086	-0,183838999	1,609437912
-0,000158569	0,02903002	0,007464299	0,000617345	1,791759469
-2,8861E-05	-0,005332663	0,002617258	0,014862774	1,945910149
-0,000500082	-0,019708584	-0,018477203	0,099150164	2,079441542
0,000413722	-0,023571242	-0,026933976	-0,034740023	2,197224577
0,000327926	-0,064900964	-0,042506649	-0,03105958	2,302585093
-0,000805132	0,004253652	-0,024122019	0,12877147	0
-0,001074152	-0,017682941	-0,034079736	0,087551768	0,693147181
-0,001215889	0,014393994	-0,02349331	0,106207619	1,098612289
0,000406168	0,019673515	-0,01081959	-0,050599474	1,386294361
0,002537206	-0,025584031	0,001458864	-0,008993125	1,609437912
-0,000284148	0,010933047	0,008934304	-0,023086674	1,791759469
0,000439864	-0,011706557	0,016465142	-0,144307565	1,945910149
-0,000545356	0,004964061	0,021518367	-0,106993474	2,079441542
0,000184336	0,012426192	0,032473867	0,009441395	2,197224577
0,000357104	-0,011670931	0,01166411	0,002008058	2,302585093
-0,000332122	-0,004488073	-0,059302653	0,002657246	0
-0,00068839	-0,032261595	-0,041276218	0,104697112	0,693147181
-0,000293311	0,003729053	-0,031728752	0,10840554	1,098612289
-0,000110141	0,034448481	-0,011304637	0,087608182	1,386294361
-0,001087339	0,004538708	0,007815349	0,118219013	1,609437912
0,000493915	0,032488442	0,029594778	0,050332651	1,791759469
0,000510578	0,005047727	0,02644409	-0,0162511	1,945910149
-0,000211839	0,002252978	0,022391094	-0,053677503	2,079441542
0,000290363	-0,000727657	0,017614513	-0,253845172	2,197224577
0,001428285	-0,045028063	0,039752436	-0,14814597	2,302585093
0,00062785	0,034544151	-0,017923859	-0,009349364	0
0,000323485	-0,011310201	-0,008917273	0,072489769	0,693147181
0,000470245	0,021884786	-0,007633239	0,057776968	1,098612289
0,000216793	0,072960569	0,00504048	0,071551266	1,386294361
-0,000374443	0,000312704	0,000789632	0,132607316	1,609437912
-0,000537205	0,012318314	-0,006458169	0,082709798	1,791759469
0,000172812	0,015141207	-0,005132351	-0,002403303	1,945910149
-0,000355778	-0,001411416	0,000744305	-0,132668127	2,079441542
-0,000682123	-0,039963672	0,011966293	-0,11846961	2,197224577
0,000138362	-0,104476443	0,027524181	-0,154244712	2,302585093
0,000169003	0,000910179	0,082168962	-0,438894338	0
-0,000440103	-0,031344674	0,055074962	-0,180820334	0,693147181
-0,000226947	-0,012520568	0,04087461	-0,154632582	1,098612289
-0,000621207	-0,050260911	0,023352975	-0,035853369	1,386294361

-0,000417649	-0,097745525	0,009198171	-0,037634106	1,609437912
0,000299023	-0,095708816	-0,026473719	0,087760258	1,791759469
1,72003E-05	-0,083451156	-0,032671199	0,252256395	1,945910149
0,001564828	0,081524716	-0,036523855	0,256084114	2,079441542
0,000521038	0,115596452	-0,054722824	0,134961906	2,197224577
-0,000865184	0,173000302	-0,060278083	0,116772056	2,302585093
5,00558E-05	0,040431393	0,098329348	0,175756813	0
0,000561013	0,0366265	0,072404256	0,004115676	0,693147181
0,000611832	-0,025642855	0,03440375	0,036947317	1,098612289
0,001626419	-0,042566083	-0,003176048	0,07091579	1,386294361
0,000615274	-0,074643112	-0,027231922	0,094403872	1,609437912
-0,000782252	-0,087847214	-0,037657692	-0,039135469	1,791759469
-0,000472292	-0,05232338	-0,053731796	-0,102439904	1,945910149
-0,000500905	0,052500385	-0,044054599	-0,129005475	2,079441542
-0,000793922	0,060175624	-0,025664121	-0,038731974	2,197224577
-0,000915222	0,093288744	-0,013621175	-0,072826647	2,302585093
6,79594E-05	0,027544174	-0,025893768	0,046963035	0
0,00105454	0,080592081	-0,007680609	-0,237676052	0,693147181
0,000115344	-0,032618854	0,020826048	-0,395695823	1,098612289
-0,000690243	-0,004382772	0,00495297	-0,368231928	1,386294361
-0,000237605	0,155981266	-0,000312886	-0,199014505	1,609437912
-0,000592887	0,081782617	-0,000742625	-0,071158961	1,791759469
-0,000563028	0,074797658	-0,000458413	0,20982101	1,945910149
0,000500774	-0,111339349	0,004931532	0,211148346	2,079441542
0,000166838	-0,146068688	0,001502963	0,325387031	2,197224577
0,000178306	-0,126288133	0,002874788	0,478457848	2,302585093

INDIVIDUAL EFFECTS

ln (FDI/GNP)- Mean value of country n	ln (Real Exchange Rate)- Mean value of country n	ln (Relative Wage)- Mean value of country n	ln (Relative Wealth)- Mean value of country n	ln (t)
-0,000982215	-0,168377743	-2,592081169	-2,588527311	0
-0,000497188	-0,118932138	-2,133463454	-1,271384932	0,693147181
0,000441703	-0,114823101	-1,468754209	-1,346526164	1,098612289
0,000379783	-0,071465936	-0,857029054	-0,917590633	1,386294361
-0,000554461	0,141371888	-0,456832387	0,439956228	1,609437912
0,001628315	0,137539464	0,322954067	0,240008515	1,791759469
-0,00017096	0,139393845	0,695044839	0,19702365	1,945910149
-3,63083E-05	0,148835965	1,023881121	1,187616376	2,079441542
-0,000191522	-0,147524741	1,301418114	1,775047735	2,197224577
-1,71462E-05	0,053982498	4,164862132	2,284376534	2,302585093
-0,000612523	-0,009051007	-2,501198586	-2,955977685	0
0,000177475	-0,111803968	-2,060903113	-1,330536422	0,693147181
5,92122E-05	-0,097698563	-1,413012524	-1,31760218	1,098612289
0,000312011	0,030365931	-0,816932644	-0,959233805	1,386294361
-0,000418313	0,114700454	-0,438647007	0,171866695	1,609437912
-9,23772E-05	0,149565892	0,305079543	0,328664808	1,791759469
-0,000123547	0,076234018	0,651194829	0,42342473	1,945910149
-0,000584747	0,137910171	0,955933559	1,430804586	2,079441542
0,000322454	-0,193228974	1,230720853	1,764311266	2,197224577
0,000960356	-0,096993956	4,087765091	2,444278007	2,302585093
-0,001713694	-0,032862984	-2,544133891	-2,690528596	0
-0,001365812	-0,120741409	-2,113500329	-1,288229939	0,693147181
-0,001234795	-0,10725406	-1,447752123	-1,346352034	1,098612289
0,001165959	0,014059912	-0,843777364	-1,10131646	1,386294361
0,002568541	0,083882144	-0,450422228	0,34671257	1,609437912
-0,000217957	0,13146892	0,306549548	0,304960789	1,791759469
0,000345177	0,069860125	0,665042712	0,264254392	1,945910149
-0,000630021	0,162582815	0,99592913	1,224660948	2,079441542
9,30672E-05	-0,157231541	1,290128696	1,808492684	2,197224577
0,000989534	-0,043763923	4,14193585	2,477345645	2,302585093
-0,001240683	-0,04160471	-2,579314526	-2,81664282	0
-0,00098005	-0,135320063	-2,120696811	-1,271084595	0,693147181
-0,000312217	-0,117919001	-1,455987565	-1,344154113	1,098612289
0,000649651	0,028834878	-0,84426241	-0,963108804	1,386294361
-0,001056003	0,114004883	-0,444065743	0,473924708	1,609437912
0,000560106	0,153024314	0,327210021	0,378380114	1,791759469
0,000415892	0,086614409	0,67502166	0,392310857	1,945910149
-0,000296504	0,159871732	0,996801856	1,277976919	2,079441542
0,000199094	-0,170385389	1,275269342	1,545206117	2,197224577
0,002060715	-0,077121054	4,170024176	2,327191617	2,302585093
-0,000280712	-0,002572485	-2,537935732	-2,828649431	0
3,18253E-05	-0,114368669	-2,088337866	-1,303291938	0,693147181
0,000451339	-0,099763268	-1,431892053	-1,394782685	1,098612289
0,000976585	0,067346966	-0,827917293	-0,97916572	1,386294361
-0,000343108	0,109778879	-0,45109146	0,488313011	1,609437912
-0,000471014	0,132854187	0,291157075	0,41075726	1,791759469
7,81258E-05	0,096707889	0,64344522	0,406158654	1,945910149
-0,000440443	0,156207338	0,975155067	1,198986295	2,079441542
-0,000773392	-0,209621404	1,269621122	1,680581679	2,197224577
0,000770792	-0,136569434	4,157795921	2,321092875	2,302585093
-0,000739559	-0,036206457	-2,43784291	-3,258194404	0
-0,000731764	-0,134403142	-2,024345631	-1,556602041	0,693147181
-0,000245853	-0,134168623	-1,383384203	-1,607192235	1,098612289
0,000138584	-0,055874514	-0,809604799	-1,086570354	1,386294361
-0,000386314	0,011720651	-0,442682921	0,318071589	1,609437912

0,000365214	0,024827057	0,271141525	0,415807721	1,791759469
-7,74861E-05	-0,001884474	0,615906371	0,660818352	1,945910149
0,001480162	0,239143471	0,937886908	1,587738536	2,079441542
0,000429769	-0,05406128	1,202932005	1,934013195	2,197224577
-0,000232754	0,140907311	4,069993656	2,592109643	2,302585093
-0,000858506	0,003314757	-2,421682524	-2,643543254	0
0,000269353	-0,066431968	-2,007016337	-1,371666031	0,693147181
0,000592926	-0,147290909	-1,389855064	-1,415612336	1,098612289
0,00238621	-0,048179686	-0,836133822	-0,979801196	1,386294361
0,000646609	0,034823063	-0,479113015	0,450109567	1,609437912
-0,000716061	0,032688658	0,259957552	0,288911994	1,791759469
-0,000566978	0,029243302	0,594845775	0,306122053	1,945910149
-0,00058557	0,210119139	0,930356163	1,202648947	2,079441542
-0,000885191	-0,109482108	1,231990708	1,760319315	2,197224577
-0,000282792	0,061195752	4,116650565	2,40251094	2,302585093
-0,000840602	-0,009572462	-2,545905641	-2,772337031	0
0,00076288	-0,022466387	-2,087101202	-1,613457759	0,693147181
9,64384E-05	-0,154266908	-1,403432765	-1,848255476	1,098612289
6,95488E-05	-0,009996375	-0,828004804	-1,418948914	1,386294361
-0,00020627	0,265447441	-0,452193978	0,156691189	1,609437912
-0,000526695	0,20231849	0,296872619	0,256888502	1,791759469
-0,000657714	0,156364339	0,648119157	0,618382966	1,945910149
0,000416109	0,046279406	0,979342294	1,542802768	2,079441542
7,55692E-05	-0,315726421	1,259157792	2,12443832	2,197224577
0,000810736	-0,158381124	4,133146528	2,953795435	2,302585093

NO EFFECTS

ln (FDI/GNP)	ln (Real Exchange Rate)	ln (Relative Wage)	ln (Relative Wealth)	ln (t)
0,000417495	-4,863647876	-2,306865714	0,033505277	0
0,000902522	-4,81420227	-1,848247999	1,350647656	0,693147181
0,001841412	-4,810093234	-1,183538754	1,275506424	1,098612289
0,001779493	-4,766736069	-0,571813599	1,704441954	1,386294361
0,000845248	-4,553898244	-0,171616932	3,061988816	1,609437912
0,003028024	-4,557730669	0,608169523	2,862041102	1,791759469
0,00122875	-4,555876288	0,980260295	2,819056238	1,945910149
0,001363401	-4,546434168	1,309096576	3,809648964	2,079441542
0,001208188	-4,842794874	1,58663357	4,397080323	2,197224577
0,001382563	-4,641287635	4,450077587	4,906409121	2,302585093
0,000770314	-3,999370254	-2,3262838	-0,025720026	0
0,001560312	-4,102123215	-1,885988327	1,599721237	0,693147181
0,001442049	-4,08801781	-1,238097738	1,612655479	1,098612289
0,001694848	-3,959953316	-0,642017858	1,971023855	1,386294361
0,000964525	-3,875618793	-0,263732221	3,102124354	1,609437912
0,00129046	-3,840753355	0,479994329	3,258922467	1,791759469
0,00125929	-3,914085229	0,826109615	3,35368239	1,945910149
0,00079809	-3,852409076	1,130848345	4,361062245	2,079441542
0,001705291	-4,183548221	1,40563564	4,694568925	2,197224577
0,002343193	-4,087313203	4,262679877	5,374535667	2,302585093
0,000141434	-3,12971854	-2,316621889	-0,161023559	0
0,000489315	-3,217596966	-1,885988327	1,241275098	0,693147181
0,000620332	-3,204109617	-1,220240121	1,183153003	1,098612289
0,003021087	-3,082795644	-0,616265361	1,428188578	1,386294361
0,004423669	-3,012973412	-0,222910226	2,876217607	1,609437912
0,001637171	-2,965386637	0,534061551	2,834465826	1,791759469
0,002200305	-3,026995432	0,892554714	2,793759429	1,945910149
0,001225107	-2,934272741	1,223441132	3,754165985	2,079441542
0,001948195	-3,254087097	1,517640698	4,337997721	2,197224577
0,002844661	-3,140619479	4,369447852	5,006850682	2,302585093
4,08474E-05	-3,895822926	-2,306865714	0,013889112	0
0,000301481	-3,989538279	-1,848247999	1,559447338	0,693147181
0,000969314	-3,972137217	-1,183538754	1,48637782	1,098612289
0,001931182	-3,825383338	-0,571813599	1,867423128	1,386294361
0,000225527	-3,740213333	-0,171616932	3,30445664	1,609437912
0,001841637	-3,701193902	0,599658833	3,208912046	1,791759469
0,001697423	-3,767603807	0,947470472	3,222842789	1,945910149
0,000985026	-3,694346484	1,269250668	4,108508851	2,079441542
0,001480625	-4,024603605	1,547718153	4,375738049	2,197224577
0,003342246	-3,93133927	4,442472987	5,15772355	2,302585093
0,000906983	-4,219417733	-2,3262838	0,058376194	0
0,00121952	-4,331213916	-1,876685935	1,583733686	0,693147181
0,001639034	-4,316608516	-1,220240121	1,492242939	1,098612289
0,00216428	-4,149498281	-0,616265361	1,907859904	1,386294361
0,000844587	-4,107066368	-0,239439528	3,375338635	1,609437912
0,000716681	-4,083991061	0,502809007	3,297782885	1,791759469
0,001265821	-4,120137359	0,855097152	3,293184278	1,945910149
0,000747252	-4,060637909	1,186806999	4,086011919	2,079441542
0,000414303	-4,426466652	1,481273054	4,567607303	2,197224577
0,001958487	-4,353414682	4,369447852	5,208118499	2,302585093
8,22054E-05	2,011063411	-2,335853251	-0,583092822	0
9,00009E-05	1,912866726	-1,922355971	1,118499541	0,693147181
0,000575911	1,913101246	-1,281394544	1,067909347	1,098612289
0,000960349	1,991395354	-0,70761514	1,588531228	1,386294361
0,000435451	2,058990519	-0,340693262	2,993173171	1,609437912

0,001186979	2,072096925	0,373131184	3,090909303	1,791759469
0,000744278	2,045385394	0,71789603	3,335919933	1,945910149
0,002301927	2,286413339	1,039876567	4,262840118	2,079441542
0,001251533	1,993208588	1,304921664	4,609114777	2,197224577
0,00058901	2,188177179	4,171983316	5,267211225	2,302585093
0,000388561	-5,343226144	-2,354721735	0,050285535	0
0,00151642	-5,41297287	-1,940055548	1,322162758	0,693147181
0,001839993	-5,493831811	-1,322894275	1,278216452	1,098612289
0,003633277	-5,394720587	-0,769173033	1,714027593	1,386294361
0,001893676	-5,311717838	-0,412152226	3,143938355	1,609437912
0,000531006	-5,313852243	0,326918341	2,982740783	1,791759469
0,000680089	-5,3172976	0,661806564	2,999950841	1,945910149
0,000661497	-5,136421762	0,997316952	3,896477736	2,079441542
0,000361876	-5,45602301	1,298951497	4,454148103	2,197224577
0,000964275	-5,285345149	4,183611354	5,096339729	2,302585093
4,4762E-05	0,395780791	-2,316621889	-0,018223739	0
0,001648244	0,382886866	-1,85781745	1,140655533	0,693147181
0,000981803	0,251086345	-1,174149014	0,905857816	1,098612289
0,000954913	0,395356878	-0,598721052	1,335164379	1,386294361
0,000679095	0,670800694	-0,222910226	2,910804481	1,609437912
0,000358669	0,607671743	0,526156371	3,011001794	1,791759469
0,00022765	0,561717592	0,877402909	3,372496259	1,945910149
0,001301474	0,451632659	1,208626046	4,29691606	2,079441542
0,000960934	0,089626832	1,488441543	4,878551612	2,197224577
0,001696101	0,246972129	4,36243028	5,707908727	2,302585093

APPENDIX B.

Regression Results

Time effects regression with the trend term

Regression Statistics	
Multiple R	0.313856651
R Square	0.098505997
Adjusted R Square	0.049762813
Standard Error	0.000709714
Observations	80

ANOVA					
	df	SS	MS	F	Significance F
Regression	4	4.18292E-06	1.04573E-06	2,076124676	0,09233248
Residual	76	3.82807E-05	5.03694E-07		
Total	80	4,24636E-05			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.000%	Upper 95.000%
Intercept	0	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
X Variable 1	-7,46859E-05	3,30128E-05	-2,262333048	0,026534046	-0,000140437	-8,93517E-06	-0,000140437	-8,93517E-06
X Variable 2	0,001219451	0,001022461	1,192662226	0,236712044	-0,00081696	0,003255861	-0,00081696	0,003255861
X Variable 3	-0,00030145	0,000400815	-0,752091326	0,454319141	-0,001099744	0,000496844	-0,001099744	0,000496844
X Variable 4	1,40625E-19	4,77187E-05	2,94695E-15	1	-9,50402E-05	9,50402E-05	-9,50402E-05	9,50402E-05
Corrected dF	Nt-N-K	Critical t	Sign	Corrected MS	5,62952E-07	Corrected R Sq.	0,14978778	
	68	1.67	(-)	Corrected F	1,857585236			
		Result	(+)	Corrected t	-2,139952827			
		Reject 1	(-)		1,128145524			
		Fail to Reject 2 and 3			-0,7111407173			
					2,78754E-15			

Time effects regression without the trend term

Regression Statistics	
Multiple R	0.313856651
R Square	0.098505997
Adjusted R Square	0.062103555
Standard Error	0.00070509
Observations	80

ANOVA					
	df	SS	MS	F	Significance F
Regression	3	4.18292E-06	1,39431E-06	2,804589474	0.045364365
Residual	77	3.82807E-05	4,97152E-07		
Total	80	4,24636E-05			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.000%	Upper 95.000%
Intercept	0	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
X Variable 1	-7,46859E-05	3,27977E-05	-2,277168177	0,02555249	-0,000139995	-9,37724E-06	-0,000139995	-9,37724E-06
X Variable 2	0,001219451	0,0010158	1,200483045	0,233632028	-0,000803268	0,00324217	-0,000803268	0,00324217
X Variable 3	-0,00030145	0,000398204	-0,757023125	0,451346282	-0,001094376	0,000491477	-0,001094376	0,000491477
Corrected dF	Nt-N-K	Critical t	Sign	Corrected MS	5,54793E-07	Corrected R Sq.	0,159547342	
	69	1.67	(-)	Corrected F	2,513203555			
		Result	(-)	Corrected t	-2,155630346			
		Reject 1	(-)		1,136410437			
		Fail to reject 2 and 3			-0,716619017			

Individual effects regression with the trend term

Regression Statistics	
Multiple R	0.320057005
R Square	0.108279105
Adjusted R Square	0.059921701
Standard Error	0.000770012
Observations	80

ANOVA

	df	SS	MS	F	Significance F
Regression	4	5.47216E-06	1.36804E-06	2.307115376	0.065826086
Residual	76	4.50654E-05	5.92965E-07		
Total	80	5.05375E-05			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.000%	Upper 95.000%
Intercept	0	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
X Variable 1	-0.000244785	0.000716543	-0.341619355	0.733580149	-0.001671905	0.001182336	-0.001671905	0.001182336
X Variable 2	0.000192223	0.000126732	1.516772852	0.133472735	-6.01852E-05	0.000444632	-6.01852E-05	0.000444632
X Variable 3	-7.19604E-05	0.000150223	-0.479025356	0.633296011	-0.000371155	0.000227234	-0.000371155	0.000227234
X Variable 4	1.9545E-05	5.64244E-05	0.346392751	0.730004759	-9.28341E-05	0.000131924	-9.28341E-05	0.000131924
Corrected dF	Nt-N-K	Critical t	Sign	Corrected MS	6,62726E-07	Corrected R Sq.	0,158877311	
	68	1.67	(-)	Corrected F	2,064261126			
		Result	(+)	Corrected t	-0,32313956			
		All fail to Reject	(-)		1,434723484			
					-0,453112624			
					0,32765474			

Individual effects regression without the trend term

Regression Statistics	
Multiple R	0,32691171
R Square	0,106871266
Adjusted R Square	0,070686104
Standard Error	0,000765629
Observations	80

ANOVA

	df	SS	MS	F	Significance F
Regression	3	5,40101E-06	1,80034E-06	3,071258433	0,032761403
Residual	77	4,51365E-05	5,86188E-07		
Total	80	5,05375E-05			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.000%	Upper 95.000%
Intercept	0	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
X Variable 1	-0,000234763	0,000711855	-0,329790285	0,742453936	-0,00165225	0,001182724	-0,00165225	0,001182724
X Variable 2	0,000192245	0,000126005	1,525686906	0,131185054	-5,86643E-05	0,000443154	-5,86643E-05	0,000443154
X Variable 3	-6,39616E-05	0,000147586	-0,4333837	0,665947735	-0,000357844	0,000229921	-0,000357844	0,000229921
Corrected dF	Nt-N-K	Critical t	Sign	Corrected MS	6,54152E-07	Corrected R Sq.	0,167238197	
	69	1.67	(-)	Corrected F	2,752166647			
		Result	(+)	Corrected t	-0,312188601			
		All fail to Reject	(-)		1,444257401			
					-0,410252991			

Both effects regression with the trend term

Regression Statistics	
Multiple R	0.204651
R Square	0.041882032
Adjusted R Square	-0.009096309
Standard Error	0.000666093
Observations	80

ANOVA					
	df	SS	MS	F	Significance F
Regression	1	1.47398E-06	3.68495E-07	0.830543451	0.509947091
Residual	76	3.37196E-05	4.4368E-07		
Total	80	3.51936E-05			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.000%	Upper 95.000%
Intercept	0	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
X Variable 1	-0.001070219	0.001285548	-0.832500493	0.407734925	-0.003630613	0.001490174	-0.003630613	0.001490174
X Variable 2	0.003878238	0.002463309	1.574401958	0.119548495	-0.001027873	0.00878435	-0.001027873	0.00878435
X Variable 3	0.000327917	0.000533281	0.61490477	0.540454375	-0.000734205	0.001390039	-0.000734205	0.001390039
X Variable 4	-5.77734E-19	4.47858E-05	-1.28999E-14	1	-8.91987E-05	8.91987E-05	-8.91987E-05	8.91987E-05
Corrected dF	Nt-N-K	Critical t	Sign	Corrected MS	4.95877E-07	Corrected R Sq.	0.097124355	
	68	1.67	(-)	Corrected F	0.743117825			
		Result	(+)	Corrected t	-0.787466631			
		All fail to Reject	(+)		1.489235161			
					0.581641683			
					-1.22021E-14			

Both effects regression without the trend term

Regression Statistics	
Multiple R	0.204651
R Square	0.041882032
Adjusted R Square	0.004008838
Standard Error	0.000661753
Observations	80

ANOVA					
	df	SS	MS	F	Significance F
Regression	3	1.47398E-06	4.91327E-07	1.121962206	0.345566758
Residual	77	3.37196E-05	4.37917E-07		
Total	80	3.51936E-05			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.000%	Upper 95.000%
Intercept	0	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
X Variable 1	-0.001070219	0.001277173	-0.837959571	0.404647006	-0.003613398	0.00147296	-0.003613398	0.00147296
X Variable 2	0.003878238	0.002447261	1.584726016	0.1171273	-0.000994887	0.008751364	-0.000994887	0.008751364
X Variable 3	0.000327917	0.000529807	0.618936976	0.537784751	-0.000727064	0.001382898	-0.000727064	0.001382898
Corrected dF	Nt-N-K	Critical t	Sign	Corrected MS	4.88691E-07	Corrected R Sq.	0.107488439	
	69	1.67	(-)	Corrected F	1.005394704			
		Result	(+)	Corrected t	-0.793235694			
		All fail to Reject	(+)		1.500145455			
					0.585902851			

No effects regression with the trend term

Regression Statistics	
Multiple R	0.166800168
R Square	0.217902397
Adjusted R Square	0.176196521
Standard Error	0.000776412
Observations	80

ANOVA					
	df	SS	MS	F	Significance F
Regression	1	1.25964E-05	3.1491E-06	5.223989812	0.00091112
Residual	75	1.52111E-05	0.02815E-07		
Total	79	5.78075E-05			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.000%	Upper 95.000%
Intercept	0.000917287	0.000125891	2.153809286	0.034468154	0.88694E-05	0.001765705	6.88694E-05	0.001765705
X Variable 1	-8.27513E-05	3.52715E-05	-2.346209456	0.021609295	-0.000153019	-1.24899E-05	-0.000153019	-1.24899E-05
X Variable 2	0.000224973	0.000124493	1.807108128	0.074755845	-2.30305E-05	0.000472976	-2.30305E-05	0.000472976
X Variable 3	-0.000502899	0.000209487	-2.400624973	0.018847075	-0.000920218	-8.558E-05	-0.000920218	-8.558E-05
X Variable 4	0.000952694	0.000376599	2.529732477	0.013513638	0.000202471	0.001702917	0.000202471	0.001702917
		Critical t	Sign	R Sq.	0.176196524			
		1.67	(-)					
		Result	(+)					
		Reject all	(-)					

No effects regression without the trend term

Regression Statistics	
Multiple R	0.388803461
R Square	0.151168131
Adjusted R Square	0.11766161
Standard Error	0.000803519
Observations	80

ANOVA					
	df	SS	MS	F	Significance F
Regression	3	8.73866E-06	2.91289E-06	4.511603294	0.005754544
Residual	76	4.90689E-05	6.45643E-07		
Total	79	5.78075E-05			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.000%	Upper 95.000%
Intercept	0.001315774	0.000409504	3.213090877	0.001927207	0.000500175	0.002131373	0.000500175	0.002131373
X Variable 1	-7.83797E-05	3.6459E-05	-2.149802374	0.034752357	-0.000150994	-5.76517E-06	-0.000150994	-5.76517E-06
X Variable 2	0.000235968	0.000128761	1.832601851	0.07077862	-2.04825E-05	0.000492418	-2.04825E-05	0.000492418
X Variable 3	-0.000119444	0.000149646	-0.798177488	0.427254571	-0.00041749	0.000178602	-0.00041749	0.000178602
		Critical t	Sign	R Sq.	0.11766161			
		1.67	(-)					
		Result	(+)					
		Reject 1 and 2	(-)					

Regression results of real exchange rates on FDI inflows to Turkey

Time effects regression with the trend term

<i>Regression Statistics</i>	
Multiple R	0,267158607
R Square	0,071373721
Adjusted R Square	0,046647743
Standard Error	0,00071102
Observations	80

ANOVA					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	2	3,03079E-06	1,51539E-06	2,997519238	0,055768105
Residual	78	3,94329E-05	5,05549E-07		
Total	80	4,24636E-05			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.000%</i>	<i>Upper 95.000%</i>
Intercept	0	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
X Variable 1	-7,90639E-05	3,22911E-05	-2,448476767	0,016590933	-0,00014335	-1,47773E-05	-0,00014335	-1,47773E-05
X Variable 2	2,04525E-20	4,78065E-05	4,27817E-16	1	-9,51755E-05	9,51755E-05	-9,51755E-05	9,51755E-05
<i>Corrected df</i>	<i>Nt-N-K</i>	<i>Critical t</i>	<i>Sign</i>	<i>Corrected MS</i>	5,63326E-07	<i>Corrected R Sq.</i>	0,14427462	
	70	1,67	(-)	<i>Corrected F</i>	2,690081368			
		<i>Result</i>		<i>Corrected t</i>	-2,319517781			
		Reject 1			-4,05285E-16			

Time effects regression without the trend term

<i>Regression Statistics</i>	
Multiple R	0,267158607
R Square	0,071373721
Adjusted R Square	0,058715494
Standard Error	0,000706505
Observations	80

ANOVA					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1	3,03079E-06	3,03079E-06	6,071897944	0,015935032
Residual	79	3,94329E-05	4,9915E-07		
Total	80	4,24636E-05			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.000%</i>	<i>Upper 95.000%</i>
Intercept	0	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
X Variable 1	-7,90639E-05	3,2086E-05	-2,464122145	0,015906457	-0,00014293	-1,51982E-05	-0,00014293	-1,51982E-05
<i>Corrected df</i>	<i>Nt-N-K</i>	<i>Critical t</i>	<i>Sign</i>	<i>Corrected MS</i>	5,55392E-07	<i>Corrected R Sq.</i>	0,154035444	
	71	1,67	(-)	<i>Corrected F</i>	5,457022203			
		<i>Result</i>		<i>Corrected t</i>	-2,336027012			
		Reject 1						

Individual effects regression with the trend term

Regression Statistics	
Multiple R	0.143617789
R Square	0.020626069
Adjusted R Square	-0.004750519
Standard Error	0.000796588
Observations	80

ANOVA

	df	SS	MS	F	Significance F
Regression	2	1.04239E-06	5.21195E-07	0.821358098	0.443649993
Residual	78	4.94951E-05	6.34553E-07		
Total	80	5.05375E-05			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.000%	Upper 95.000%
Intercept	0	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
X Variable 1	-5.55569E-05	0.000731885	-0.075909304	0.939685618	-0.001512628	0.001401515	-0.001512628	0.001401515
X Variable 2	6.89666E-05	5.38729E-05	1.280171742	0.204278904	-3.82862E-05	0.000176219	-3.82862E-05	0.000176219
Corrected dF	Nt-N-K	Critical t	Sign	Corrected MS	7.07073E-07	Corrected R Sq.	0.098300816	
	70	1.67	(-)	Corrected F	0.737116241			
		Result		Corrected t	-0.071911232			
		Fail to reject 1			1.212746291			

Individual effects without the trend term

Regression Statistics	
Multiple R	0.006976654
R Square	1.86737E-05
Adjusted R Square	-0.012609554
Standard Error	0.000799803
Observations	80

ANOVA

	df	SS	MS	F	Significance F
Regression	1	2.45985E-09	2.45985E-09	0.003845409	0.950712409
Residual	79	5.05351E-05	6.39684E-07		
Total	80	5.05375E-05			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.000%	Upper 95.000%
Intercept	0	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
X Variable 1	-1.53035E-05	0.000730568	0.062011366	0.950710404	-0.001408857	0.001499464	-0.001408857	0.001499464
Corrected dF	Nt-N-K	Critical t	Sign	Corrected MS	7.11761E-07	Corrected R Sq.	0.089933186	
	71	1.67	(+)	Corrected F	0.003456001			
		Result		Corrected t	0.058787762			
		All fail to Reject						

Both effects regression with the trend term

Regression Statistics	
Multiple R	0,103116395
R Square	0,010632991
Adjusted R Square	-0,014871714
Standard Error	0,000668134
Observations	80

ANOVA					
	df	SS	MS	F	Significance F
Regression	2	3,74214E-07	1,87107E-07	0,419143394	0,659101164
Residual	78	3,48194E-05	4,46403E-07		
Total	80	3,51936E-05			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.000%	Upper 95.000%
Intercept	0	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
X Variable 1	-0,001153363	0,001259707	-0,915580028	0,362709178	-0,003661248	0,001354522	-0,003661248	0,001354522
X Variable 2	-3,20297E-19	4,4923E-05	-7,12991E-15	1	-8,94349E-05	8,94349E-05	-8,94349E-05	8,94349E-05
Corrected df	Nt-N-K	Critical t	Sign	Corrected MS	Corrected R Sq.			
	70	1.67	(-)	0,376154328	0,089217692			
		Result		Corrected F	Corrected t			
		Fail to reject		-0,867357282	-6,75439E-15			

Both effects regression without the trend term

Regression Statistics	
Multiple R	0,103116395
R Square	0,010632991
Adjusted R Square	-0,002025237
Standard Error	0,000663892
Observations	80

ANOVA					
	df	SS	MS	F	Significance F
Regression	1	3,74214E-07	3,74214E-07	0,849034054	0,359666995
Residual	79	3,48194E-05	4,40752E-07		
Total	80	3,51936E-05			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.000%	Upper 95.000%
Intercept	0	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
X Variable 1	-0,001153363	0,001251709	-0,921430439	0,359631138	-0,00364483	0,001338104	-0,00364483	0,001338104
Corrected df	Nt-N-K	Critical t	Sign	Corrected MS	Corrected R Sq.			
	71	1.67	(-)	4,90414E-07	0,099415673			
		Result		Corrected F	Corrected t			
		Fail to reject		0,763055922	-0,873530722			

No effects regression with the trend term

Regression Statistics	
Multiple R	0.394870992
R Square	0.155923101
Adjusted R Square	0.133999025
Standard Error	0.000796045
Observations	80

ANOVA

	df	SS	MS	F	Significance F
Regression	2	0.013531416	1.506761406	7.111957905	0.001461561
Residual	77	1.87911405	0.336886407		
Total	79	5.780751405			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.000%	Upper 95.000%
Intercept	0.000434155	0.000237388	1.828881882	0.071289262	-3.85459E-05	0.000906857	-3.85459E-05	0.000906857
X Variable 1	-7.95617E-05	3.61213E-05	-2.202625413	0.030612673	-0.000151488	-7.63491E-06	-0.000151488	-7.63491E-06
X Variable 2	0.000395417	0.000127994	3.089342897	0.002790491	0.000140548	0.000650285	0.000140548	0.000650285
		Critical t	Sign	R Sq.	0.133999025			
		1.67	(-)					
		Result						
		Reject 1						

No effects regression without the trend term

Regression Statistics	
Multiple R	0.226497196
R Square	0.05130098
Adjusted R Square	0.039138172
Standard Error	0.000838512
Observations	80

ANOVA

	df	SS	MS	F	Significance F
Regression	1	2.96558E-06	2.96558E-06	4.217856613	0.043351661
Residual	78	5.48419E-05	7.03102E-07		
Total	79	5.78075E-05			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.000%	Upper 95.000%
Intercept	0.001035466	0.000143148	7.233529338	2.82262E-10	0.00075048	0.001320452	0.00075048	0.001320452
X Variable 1	-7.81349E-05	3.80451E-05	-2.0537421	0.043351661	-0.000153877	-2.39283E-06	-0.000153877	-2.39283E-06
		Critical t	Sign	R Sq.	0.039138172			
		1.67	(-)					
		Result						
		Reject 1						

APPENDIX C.

Heteroskedasticity Test Results

Regression of Real Exchange Rates on inward FDI flows to Turkey

Regression Type	Adjusted R ²	Critical χ^2	Result
No effects ¹	0.025166	0.351846	Not Significant
No effects	0.008286	0.0039321	Significant
Time effects ¹	0.105599	0.351846	Not Significant
Time effects	0.098971	0.0039321	Significant
Individual effects ¹	0.146812	0.351846	Not Significant
Individual effects	0.094283	0.0039321	Significant
Time and Ind. effects ¹	0.076688	0.351846	Not Significant
Time and Ind. effects	0.093799	0.0039321	Significant

¹Regression with the trend term as a dependent variable

Regression of Real Exchange Rates, Relative Wealth, and Relative Wages on inward FDI flows to

Turkey

Regression Type	Adjusted R ²	Critical χ^2	Result
No effects ¹	0.040961	1.63539	Not Significant
No effects	0.061219	0.351846	Not Significant
Time effects ¹	0.113040	1.63539	Not Significant
Time effects	0.046648	0.351846	Not Significant
Individual effects ¹	0.211623	1.63539	Not Significant
Individual effects	0.171897	0.351846	Not Significant
Time and Ind. effects ¹	0.008808	1.63539	Not Significant
Time and Ind. effects	0.126925	0.351846	Not Significant

¹Regression with the trend term as a dependent variable

APPENDIX D.

Autocorrelation Values of Lag 1 and Box Ljung Statistics

Regression of Real Exchange Rates on inward FDI flows to Turkey

Regression Type	Autocor.coef.	χ^2	Lag	χ^2	Lag	χ^2	Lag	χ^2	Lag	Result
No effects ¹	0.246	6.7	12	14.7	24	30.7	36	45.2	48	Not Reject
No effects	0.167	13.5	12	26.7	24	46.2	36	61.8	48	Reject
Time effects ¹	-0.154	19.7	12	26.0	24	42.6	36	57.5	48	Reject
Time effects	-0.154	19.7	12	26.0	24	42.6	36	57.5	48	Reject
Individual effects ¹	0.111	14.2	12	26.7	24	44.3	36	62.8	48	Reject
Individual effects	0.138	10.5	12	16.9	24	24.6	36	44.2	48	Not Reject
Time and Ind. effects ¹	0.171	9.0	12	17.7	24	24.8	36	32.2	48	Not Reject
Time and Ind. effects	0.171	9.0	12	17.7	24	24.8	36	32.2	48	Not Reject

¹Regression with the trend term as a dependent variable

Regression of Real Exchange Rates, Relative Wealth, and Relative Wages on inward FDI flows to Turkey

Regression Type	Autocor.coef.	χ^2	Lag	χ^2	Lag	χ^2	Lag	χ^2	Lag	Result
No effects ¹	0.245	5.9	12	12.9	24	24.6	36	37.8	48	Not Reject
No effects	0.284	5.0	12	8.3	24	23.7	36	38.4	48	Not Reject
Time effects ¹	-0.210	19.0	12	25.0	24	39.4	36	56.1	48	Reject
Time effects	-0.210	19.0	12	25.0	24	39.4	36	56.1	48	Reject
Individual effects ¹	0.220	8.1	12	16.3	24	30.6	36	51.0	48	Not Reject
Individual effects	0.219	8.1	12	16.3	24	30.6	36	51.0	48	Not Reject
Time and Ind. effects ¹	0.190	10.4	12	19.7	24	38.1	36	50.3	48	Not Reject
Time and Ind. effects	0.190	10.4	12	19.7	24	38.1	36	50.3	48	Not Reject

¹Regression with the trend term as a dependent variable