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## GEÇİŞ EKONOMİLERİNDE YOLSUZLUĞUN DYY ÜZERİNDEKİ ETKİSİ: PANEL VERİ ANALİZİ

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### Öz

Küreselleşme ile birlikte yurt dışında yatırım yapmak isteyen firmalara yönelik olarak yeni fırsatlar ortaya çıkmaktadır. Çoğu ülke ekonomik büyümeyi sürdürülebilir kılmak için DYY'yi (Doğrudan Yabancı Yatırımlar) çekmede avantajlı konumda olduğu bazı faktörler üzerinde durmaktadır. Bir firmanın kendi ülkesi dışında başka ülkede yatırım yapma kararı farklı gerekçelerle açıklanabilir. Yolsuzluk düzeyi düşük olan ülkeler yatırımlar için daha elverişli bir yatırım iklimi sağladıklarından dolayı bu ülkelerden arzu edilen miktarda DYY çekebilmesi beklenmektedir. Bu bakış çerçevesinde çalışmada yolsuzluk ve DYY arasındaki ilişki "Geçiş Ekonomileri" olarak adlandırılan Orta ve Doğu Avrupa ülkeleri (1996-2013) ile Eski Sovyetler Birliği ülkeleri (1998-2013) için panel eşbütünleşme ve panel nedensellik analizleri ile ayrı ayrı araştırılmıştır. Panel eşbütünleşme test sonuçlarına göre yolsuzluğun DYY üzerinde önce pozitif; belirli bir düzeyden sonra ise negatif bir etkisi olduğu görülmüştür. Nedensellik test sonuçlarına göre ise yolsuzluktan DYY'ye uzun dönemde tek yönlü bir ilişki görülmüştür. Çalışmanın bulgularına göre ülkelerin DYY girişlerini artırmaları için yolsuzluğun azaltılması önemli bir strateji olarak görülmektedir.

**Anahtar Kelimeler:** Yolsuzluk, DYY, Orta ve Doğu Avrupa Ülkeleri, Eski Sovyet Birliği Ülkeleri, Heterojen Panel Nedensellik

**Jel Kodu:** D73, P29, C33, F21, F42.

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## EFFECT OF CORRUPTION ON FDI IN TRANSITION ECONOMIES: EVIDENCE FROM CAUSALITY ANALYSIS

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### Abstract

New opportunities are emerging for countries which want to invest abroad with the diffusion of globalization. Most countries lay emphasis on some factors which make them profitable to attract foreign direct investment for possible sustainable economic growth. The decision of a company which is investing in foreign countries instead of their country can be explained with various reasons. Countries with least corruption level provide convenient atmosphere for foreign investors. These countries are expected to attract desired amount of FDI. Within this perspective, corruption and FDI relation for Central and Eastern (1996-2013) and former Soviet Union (1998-2013) countries called "Transition Economies" were analyzed separately with panel cointegration and panel causality tests in this study. Panel cointegration analysis results show that corruption has a positive impact on FDI, however it has a negative impact after a certain period. Panel causality test results indicate that there is an unidirectional causality relationship from corruption to FDI in the long term. According to findings, raising foreign direct investment inflows is seen as an important strategy for countries to reduce corruption.

**Keywords:** Corruption, FDI, Central and Eastern Europe Countries, The Former Soviet Union Countries, Heterogeneous Panel Causality

**Jel Classification:** D73, P29, C33, F21, F42.

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### **1. Introduction**

FDI flows during the recent years in global economy has been a factor that motivates researchers to concentrate on FDI determinants and explain them. When viewed from this aspect, host countries' corruption level occurs as an important factor to determine FDI's location. When considered theoretical, corruption is debureaucratizing with bribery (Al-Sadig, 2009:267). This situation is seen as a serious cost coercion for sectors that produce. Corruption can increase uncertainty in markets and decrease the profitability of investment projects. Corruption is thought as an economic problem by reason of inducing high costs in manufacturing and tertiary sectors. According to another approach; corruption debureaucratizes and expedites investment decisions' implementation. This effects FDI positively. Haksoo (2010) states that countries with high political rights have advanced FDI outflows and countries with high corruption and low level of democracy have advanced FDI inflows. Cuervo-Cazurra (2008) states that high level of corruption attracts more FDI investment in transition countries.

FDI has been gaining more importance with the developments in global markets. Host countries expect positive effects from FDI such as increasing production capacity of economy, contributing increase in production, increasing employment opportunities and bringing new technology and management information. Countries make competition to attract these investments in order to take advantage of the benefits of FDI in recent years in global economy. Multinational companies, the performer of FDI, take into account economic, social and political features of host countries while choosing where to invest. Factors such as economic growth rates, public spending, former FDI flows and per capita GDP give information about macroeconomic conditions in host countries. Beside these economic factors management style of government is effective for establishing investment environment. Lucas (1990) justifies that political risk is an important factor which restricts capital flows. Investors opt for countries where FDI risk is minimum, intellectual property rights are secured, low level of corruption and social conflict exist (Biglaiser and DeRouen, 2006: 52). Democratic environment, political stability and corruption factors in country can give information about the level of uncertainty and risk. This situation shows that social, economic and political dimensions of factors which determine FDI should not be neglected. Corruption emerges as an important factor for causing both economic and political risk and uncertainty in countries. Corruption is in the way of environment required for functioning of a free market economy, social norms, development of international economic relations (Primorac and Smoljic, 2011: 178).

Concept of transition economies is used for countries which are governed by centrally planned socialist system since 1990s and after then wants to switch to free

markets and wants to constitute a democratic society (Ağayev and Yamak, 2009:180). In parallel with this transition process reforms that are essential for switching market economy, democratization and economic stability reforms can be implemented differently in different countries. Content of transition process for relevant countries consist of four main areas as liberalization, macroeconomic stabilization, restructuring and privatization and legal and institutional reforms (Bal, 2003:155). Transition process commence at once in close to 30 countries (Some countries of Central and Eastern Europe, The Baltic Countries, former Soviet Union Members-CIS-) which they differ among themselves for methods of reform organizational structure (Kinoshita and Campos, 2003: 2). These centrally planned economies get different results that differ for every country by performing stream of strategies to adopt economic and political reforms. As a matter of fact, with the downfall of socialist system in the late 1980s, the process of “transition economy” gave way to Central and Eastern Europe and Former Soviet Union countries to increase opportunities for investment. These economies have made significant progress on the path of economic development by implementing new reforms since beginning of the process. Transition economies offer enormous investment opportunities for global markets and they have great potential in development of various industries and natural resources they have (King, 2003: 2). Moreover, these economies are countries where cheap and highly educated workforce exist (Kinoshita and Campos, 2003: 2).

The question “Have structural reforms created a positive effect on FDI?” is considered important in the economies in transition. This study seeks for an answer to the related question. The relation between corruption and FDI is going to be searched by using panel cointegration and panel causation in Middle & Eastern Europe countries and old Soviet Union countries.

The contribution of this study to the literature is those of two; i) It is accepted that corruption is one of the most important determinant now with the recent developments in the World. In this context, the first hypothesis is that low corruption level is a crucial factor for FDI. ii) It is seen that there is no agreement in the studies which search for the effect of corruption level on FDI in economies in transition and the studies on this topic is inadequate (Cuervo-Cazurra, 2008-King, 2003). It is seen that different conclusions were reached in the studies which was related to this topic in economies in transition.

The reform process in transition economies took place in different forms in each country. For this reason, former Soviet Union (Russia, Azerbaijan, Georgia, Kazakhstan, Kyrgyzstan, Uzbekistan, Turkmenistan, Ukraine) and Central and Eastern Europe (Albania, Bulgaria, Croatia, Czech Republic, Hungary, Romania, Slovenia) countries were analyzed in two groups. Thus, comparison can be made for two

different country groups. Concordantly, second hypothesis of this study is as below: In countries where structural reforms are made with the transition process, reforms in the long run decrease the corruption and provide an admissible investment environment for foreign investors. This study aims to contribute to literature by testing these hypotheses.

In line with this purpose, this study was designed as follows. In the second chapter, the relation between corruption and FDI will be discussed theoretically; in the third chapter empirical literature will be analyzed. Method, model, data set and empirical findings will be provided in the fourth chapter. In the last chapter which is the fifth, findings will be evaluated and several policy recommendations will be suggested.

## **2. Theoretical Framework**

According to the definition made by World Bank, corruption abuses public force for personal gain (Castro, 2013:62). Transparency International (1996) defines corruption as behaviors which are exhibited by politician in public sector and civil servant inappropriately and lawlessly to enrich them and their people by misusing one's power. It is accepted that corruption has potential to decrease investments especially foreign investments (Mauro, 1995; Keefer and Knack, 1996; Castro 2013). Economies with high level of corruption have more uncertainty because of high cost of doing business. Factors causing corruption can be listed as below; excessive bureaucracy, strict rules for formulating, and implementing policy, loginess of legal system, low wages in public sector and lack of economic freedom at desired level. For whatever reason, corruption should be appraised as an economic problem which is an axe to grind not just for underdeveloped and developing but also for developed countries (Leon, 2010:2). By the way of FDI, globalization process both causes new standards in work ethics and investment policies and reveals as an obstacle for the development of this process in government policies. There have been social, economic and political factors that affect decision of multinational companies (Castro, 2013: 62).

There are lots of economic, social and politic factors that affect the decision of investing abroad for multinational corporations. UNCTAD (1998), summarizes the determinants of FDI under three titles; i) economic conditions of host country (factors that motivate investors can evolve: seeking for natural resource, seeking for market and seeking for increasing fortunes), ii) government policies (private sector, commerce, industry and FDI oriented policy), iii) strategies of multinational corporations. If we discuss corruption in a broad sense, it should be evaluated economically, socially, and politically. As follows; extra cost emergent about making investment creates the economic dimension of corruption. Otherwise, because of uncertainty in countries, corruption is regarded as an important factor that delay

investment decisions. Being an obstacle factor for arguing issues like moral or ethical issues is also creating social dimension of corruption. Ultimately, government employees, figures of policy and political system, that initiate corruption and have a big part in increasing corruption, must be assessed. Busse and Hefeker (2007) stated that factors such as stability of governments, internal and external conflicts, corruption and ethnic tensions, democratic accountability, law and order and bureaucracy are crucial determinants of FDI inflows in developing countries.

Economists have been intended to explain negative effects of corruption on economy with the phenomenon of globalization in early 1990s. Hines (1995) argued that corruption affects economic growth negatively, Rose-Ackerman (1999) argued that corruption increases manufacturing costs, Della Porta and Vanucci (1999) indicated that corruption in host country affects FDI negatively, Busse-Hefeker (2007) explained that corruption is an important determinant of FDI inflows and finally, Mathur and Singh (2013) expressed that corruption affects investors' decisions to a larger extent. Both positive and negative effects of corruption have been discussed in literature. Negative effect can be stated as *"corruption has decreasing effect on FDI because of increasing uncertainty and costs"*. Positive effect can be stated as *"unadvanced audits and regulation in countries decrease bureaucracy and increase costs, this situation increases the FDI"*. These two views in literature were presented as completely opposing arguments to each other. Only way to solve this apparent theoretical contradiction is acceptance of these two views arise and get into act in different situations. While corruption plays an impediment role for countries where market organizations are established, in countries where market organizations are not up and running corruption plays a constructive role (Cuervo-Cazurra, 2008:13).

### 3. Literature Review

After reviewing studies discussing the relation between corruption and FDI, it is realized most of the studies reveal that the level of corruption in host country affects FDI. First group studies assert the negative relation among these variables. For instance, in the analysis about quality of FDI and corruption which Smarzynska and Wei (2000) made for Eastern Europa and Former Soviet Union countries, a negative relation between an FDI and corruption was found. Adeb and Davoodi (2000) remarked the importance of structural reforms for decreasing corruption in study made for some transition economies. According to this study, attracting FDI structural reforms are more important than decreasing corruption. This study provides evidences showing that structural reform is an important factor to reduce the level of corruption. In reference to Habib and Zurawicki's study performed in 2001 for 111 countries, corruption has a negative effect on investments. Also they found that corruption affects foreign investments more compared to local

investments. King (2003) analyzed the effect of corruption on FDI for transition countries for 1992-2000 and found a negative relation between these two variables. Ketkat et al. (2005) reached the result that “countries with high corruption attracts less capital inflows” in the study they made for 54 developed and developing countries. Dahlsström and Johnson (2005) analyzed the effects of corruption on FDI for developing countries and found a negative effect. With respect to this study, the process of uncertainty and costs in developing countries are longer than and bigger than developed countries. Egger and Vinner (2006) analyzed corruption and FDI relation for 21 OECD and 59 non-OECD countries, using bidirectional panel data analyses for 1983-1999 era. A negative effect of corruption on FDI was found in that analysis. Gani (2007) found that controlling corruption affects FDI inflows positively in the study for Asian and Latin America. Caetano and Caleiro (2009) made an analysis for 97 countries using “fuzzy logic method”. They divided countries into groups as the countries with high level of corruption (first group) and the countries with low level of corruption (second group). In the first group countries, corruption has a negative effect on FDI, in the second group countries this effect is quite a little. Al-Sadig (2009) analyzed the relation of FDI and corruption for 117 countries and 1984-2004 era using panel data analysis, a negative effect of corruption on FDI was found. Javornick and Wei (2009) made analysis for 1403 firms which partaking in transition countries in Eastern and Central Europe. At the end of the analysis, it has been observed that corruption makes the local bureaucracy less transparent; so the cost of operations increases. In consequence of implementations, it is inferred that corruption decreases the host country’ capital inflows and accelerates the ownership structures established through joint ventures. Koyuncu (2011) used annual data of 71 countries to analyze FDI and corruption relation for 2000-2007 era. Positive effect of decreasing corruption on FDI was found in the end. Samadi (2011) investigated relation between corruption and FDI for D8 countries for 1996-2009 era. Negative relation was found between variables in panel data analysis. Castro and Nunes (2013) made an analysis for 73 countries and they found more FDI inflows in countries where corruption is low. Tosun et al. (2014) investigated Turkey for corruption-FDI relation. Disruptive effect of corruption on FDI in both short and long run was found.

Studies in the second group are those which corruption affects FDI positively. Egger and Winner (2006) made an analysis for 73 developing and developed countries. According to the results, corruption has a stimulant effect on FDI and in the long run corruption increases FDI inflows. Cuervo and Cazorra’s (2006) results indicate that corruption affects investors disparately. In reference to structural analysis made by Brouthers et al. (2008), corruption has a deterrent effect on FDI that seeking source and corruption can be adopted if extra cost can be endured for FDI that seeking market. Cuervo-Cazorra (2008) analyzed the corruption and FDI

relation for transition economies. Based on the results, corruption affects FDI negatively but in transition economies high level of corruption attracts FDI much more. Craigwell and Wright (2011) made analysis for 42 developing countries, according to the results there is a bidirectional causality between corruption and FDI and they determined a nonlinear relation from FDI inflows to corruption.

#### 4. Econometric Analysis

In this study, the relation between corruption and FDI for Central and Eastern Europe countries for 1996-2013 era and for Former Soviet Union countries for 1998-2013 era is analyzed by using panel data analysis. Empirical analysis for this study consists of four steps. In the first step, stability of variables represent corruption and FDI are tested with unit root tests. In the second step, long run relation between corruption and FDI is investigated by panel cointegration method. For the third step, possible long run equilibrium relation' parameters are estimated. In the fourth and final step, direction of the relation between FDI and corruption is investigated by using causality analyses.

##### 4.1. Method

To prevent the problem of spurious regression in econometric analyses, series of the variables used in analyses must be investigated whether they contain unit root or not. Fisher-ADF test developed by Maddala and Wu (1999) and IPS test developed by Im et al. (2003) are the tests which are frequently used for unit root researches. In Fisher-ADF test, p values obtained from unit root tests for every i section are considered and have advantage of not to be bound to different delay lengths in individual ADF regressions. Fisher-ADF test is non-parametric and has chi-square distribution with 2n degree of freedom. Fisher-ADF test statistics is as below.

$$\lambda = -2 \sum_{i=1}^n \log_e(\pi_i) \sim \chi^2_{2n} \text{ (d. f.)} \quad (1)$$

n refers to number of sections forming panel and  $\pi_i$  refers to p values obtained from ADF unit root tests for  $\pi_i$  unit in equation (1).

Im et al. (2003) specifies panel unit root test (Levin et al. 2002), calculates t statistics for every section and average the sections forms panel. IPS test permits units that forms the panel to vary for every p value, test statistics can be obtained as follows:

$$\Delta y_{it} = \mu_i + \rho y_{it-1} + \sum_{j=1}^m \alpha_j \Delta y_{it-j} + \delta_{it} + \theta_t + \varepsilon_{it} \quad (2)$$

In analysis of unit root every i tested for  $p = 0$  and at least one i tested against  $p < 0$  alternative hypothesis. Rejection of null hypothesis means that series do not contain unit roots which means stationary. If unit root exists, first differences of series must be taken and continued to unit root analysis.

If the series is stationary at first difference while it is not stationary at level value in consequence of unit root test, existence of cointegration relation must be investigated before estimating parameter between variables. Cointegration relation in econometric analysis is often analyzed with panel cointegration test developed by Pedroni (1999; 2004). Pedroni developed 7 different test statistics to test null hypothesis "there is no cointegration relation". Pedroni (1999, 2004) obtains these statistics from the residuals of the panel cointegration test. Four of these statistics consist of in-group statistics (panel-v, panel-ρ, half parametric panel-t and parametric panel-t), and the other three of these statistics consist of intergroup statistics (group- ρ statistic, half parametric group-t statistic and parametric group-t). After comparing these seven statistics to critical values, it will be determined that cointegration relation is accepted or not. At the end of t test, if related statistics are bigger than critical values, null hypothesis is rejected and long run cointegration relation between variables included to study is accepted.

In case of presence of the panel cointegration, long run cointegration parameters are estimated. FMOLS (panel fully modified ordinary least squares) and DOLS (panel dynamic ordinary least squares) tests developed by Pedroni (2000, 2001) are frequently used methods. FMOLS and DOLS estimators developed after getting biased results between series which are in long run relation and estimated with least squares methods. Advantage of FMOLS is fixing autocorrelation and endogeneity problem with non-parametric approach. DOLS method is fixing autocorrelation problem by using lagged values of variables and enables better and more dynamic estimator.

Panel cointegration analysis gives information about the existence of relation between variables but does not give information about the direction of relation. Causality tests are used for this situation. For this purpose, causality test based on panel vector error correction (VEC) model is utilized. This test gives information about both long and short term causality relationship. In this sense, a panel VEC model can be written as follows:

$$\Delta y_{it} = \alpha_{1i} + \sum_{k=1}^q \beta_{11ik} \Delta y_{it-k} + \sum_{k=1}^q \beta_{12ik} \Delta x_{it-k} + \lambda_{1i} \hat{\varepsilon}_{it-1} + v_{1it} \quad (3)$$

$$\Delta x_{it} = \alpha_{2i} + \sum_{k=1}^q \beta_{21ik} \Delta x_{it-k} + \sum_{k=1}^q \beta_{22ik} \Delta y_{it-k} + \lambda_{2i} \hat{\varepsilon}_{it-1} + v_{2it} \quad (4)$$

In Equation 3 and 4, "Δ, q, λ" represent first difference, lag length and error correction term, respectively. Short term causality relationship between the variables is tested by Wald test. Long term causality relationship can be determined according to statistical significance of error correction term.



#### 4.2. Model and Data Set

The aim of this study is to analyze the relation between corruption and FDI for Central and Eastern Europe and former Soviet Union countries. A quadratic model is as below used for this purpose.

$$FDI_{it} = \beta_{0i} + \beta_{1i} \text{Corruption}_{it} + \beta_{2i} \text{Corruption}_{it}^2 + \varepsilon_{it} \quad (5)$$

$i$ ; states the number of countries composes the panel and  $t$ ; states the period.

FDI is represented with share of FDI in GDP (%GDP) and corruption is represented with corruption index (index value is between 0-100 and an increase in index means increase in corruption) in equation numbered (5).  $\text{Corruption}^2$  represents corruption's square, reason of square is presenting the nonlinear relation between FDI and corruption. According to estimation results, if  $\beta_1 > 0$  and  $\beta_2 < 0$  corruption first increase FDI and then decrease for the next period. In that case in the first period corruption affects FDI positively, but in the next period corruption affects negatively.

Corruption data used in the analyses were acquired from Heritage Foundation and the data related to FDI were acquired from World Bank. Countries and periods discussed in research are as below; 1996-2013 era, 7 Central and Eastern Europe countries (Albania, Bulgaria, Croatia, Czech Republic, Hungary, Romania, Slovenia) and 1998-2013 era 8, former Soviet Union countries (Russia, Azerbaijan, Georgia, Kazakhstan, Kyrgyzstan, Uzbekistan, Turkmenistan, Ukraine). Series used in the analyses for both country groups were viewed in figure 1-2.

Figure 1: Series Belong to Corruption and FDI in Central and Eastern Europe Countries (1996-2013)

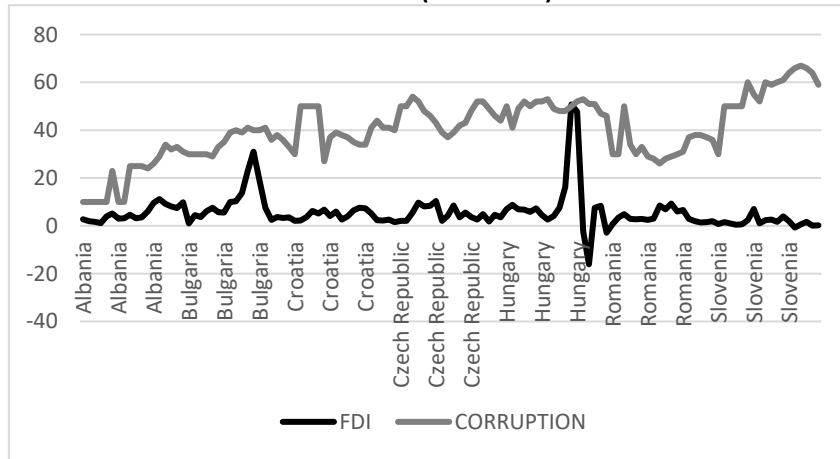
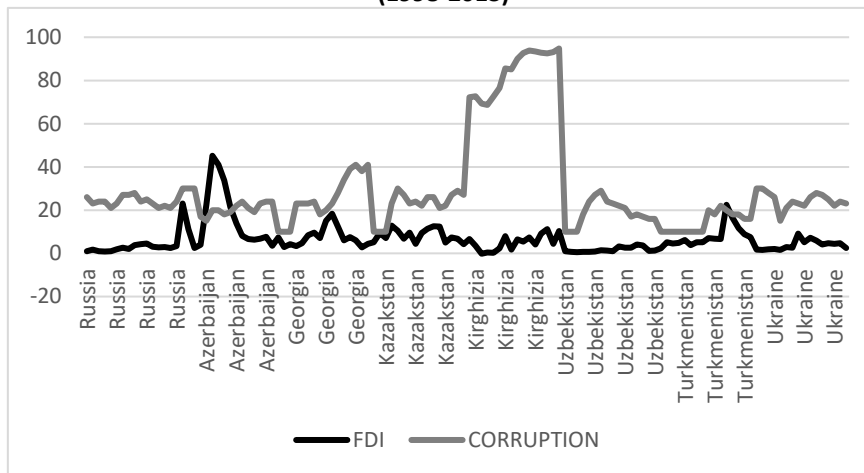


Figure 2: Series Belong to Corruption and FDI in Former Soviet Union Countries (1998-2013)



#### 4.3. Empirical Findings

Results of Fisher-ADF test developed by Maddala and Wu (1999) and results of IPS panel unit root test developed by Im et al. (2003) are given in Table 1. Pursuant to test results FDI, corruption and corruption<sup>2</sup> series for two country groups were not stationary at level value, after first differences series were stationary. Cointegration relation must be analyzed before estimating coefficients of variables in the next step.

Table 1: Panel Unit Root Test Results

Variables	Former Soviet Union Countries		Central and Eastern Europe Countries	
	ADF-Fisher	IPS	ADF-Fisher	IPS
FDI	14,63	-0,69	19,77	-0,43
Corruption	7,83	-0,19	18,57	-0,34
Corruption <sup>2</sup>	14,53	-0,01	15,87	-0,02
$\Delta$ FDI	49,61*	-4,49*	41,75*	-4,07*
$\Delta$ Corruption	63,91*	-1,92**	54,60*	-5,92*
$\Delta$ Corruption <sup>2</sup>	26,27**	-1,68**	52,14*	-5,97*

\* refers to %1 significance level, \*\* refers to %5 significance level, \*\*\* refers to %10 significance level

Panel cointegration results is as below in Table 2. Considering test results for both country groups, four of seven statistics in fixed model and two of seven statistics in fixed and trend model reject the null hypothesis by indicating that there is no

cointegration. In other saying test results for two country groups supports long run counterbalanced relation among FDI, corruption and corruption<sup>2</sup> variables.

Table 2: Panel Cointegration Test Results

Test Statistics	Former Soviet Union Countries		Central and Eastern Europe Countries	
	Fixed	Fixed and Trend	Fixed	Fixed and Trend
Panel v	1,81**	-0,29	-1,58	-3,23
Panel rho	0,75	0,97	0,64	2,12
Panel PP	-0,18	-1,09	-1,42***	-0,09
Panel ADF	-2,65*	-1,08	-4,54*	-3,95*
Grup rho	-0,97	1,76	0,51	1,73
Grup PP	-1,57**	-1,60**	-1,70***	-0,81
Grup ADF	-2,11*	-2,03**	-2,04**	-2,46*

\* refers to %1 significance level, \*\* refers to %5 significance level, \*\*\* refers to %10 significance level

Third phase after estimating panel cointegration relation is estimating long run cointegration parameters. Panel DOLS and panel FMOLS test results used for estimating cointegration parameters are reported in Table 3.

Table 3: Panel Cointegration Parameter Estimation Results

	Panel DOLS		Panel FMOLS	
	Corruption	Corruption <sup>2</sup>	Corruption	Corruption <sup>2</sup>
<b>Former Soviet Union Countries</b>	1,575* [6,14]	-0,062* [-5,54]	3,501* [2,83]	-0,082* [-2,93]
<b>Central and Eastern Europe Countries</b>	0,371* [3,15]	-0,004*** [-1,89]	0,369* [3,86]	-0,005** [-2,58]

\*, \*\* and \*\*\* refers to %1, %5 and %10 significance levels respectively.

When the Table 3 is examined; (i) Considering panel DOLS and panel FMOLS results, increase of corruption in former Soviet Union countries has positive effect at first and then negative effect on FDI (ii) Similar estimation results are obtained for Central and Eastern Europe countries. According to these findings in former Soviet Union and Central and Eastern Europe countries there is a nonlinear relation corruption and FDI. But, ultimate effect of corruption on FDI is negative. Therefore; decrease in the corruption level increases the FDI in both country groups.

Panel cointegration test does not give any information about the direction of the relation. To this extent, VEC causality test results are reported in Table 4.

Table 4: Panel Causality Test Results

Former Soviet Union Countries			
	Short-run causality		Long-run causality
	$\Delta$ Corruption (Corruption <sup>2</sup> )	$\Delta$ FDI	ECT
$\Delta$ Corruption (Corruption <sup>2</sup> )	-	4,48 (0,21)	-0,79 <sup>a</sup> [-8,02]
$\Delta$ FDI	0,42 (0,93)	-	-0,02 [-0,32]
Central and Eastern Europe Countries			
	Short-run causality		Long-run causality
	$\Delta$ Corruption (Corruption <sup>2</sup> )	$\Delta$ FDI	ECT
$\Delta$ Corruption (Corruption <sup>2</sup> )	-	0,61 (0,73)	-0,59 [-5,17]
$\Delta$ FDI	0,42 (0,81)	-	0,10 [1,06]

Note: a, ( ) and [ ] represent %1 significance, prob values and t statistics, respectively.

Table 4 indicates that there is no causality relationship between FDI and corruption in the short term according to both analysis groups. In the long term, there is a one-directional causality relationship from corruption to FDI. These findings support panel cointegration coefficient results.

### 5. Conclusion

This study has analyzed the relation between corruption and FDI for 1996-2013 era for seven Central and Eastern Europe Countries and also for 1998-2013 era for eight Commonwealth of Independent States. In this study, stationary of variables has been tested by using Maddala and Wu (1999) and IM et al. (2003) and precipitated that series are stationary at first difference. Following panel cointegration test, long run relationship among series was analyzed with Pedroni (1999; 2004) panel cointegration test, the obtained results indicate the existence of long run relation. In the next step, DOLS and FMOLS tests developed by Pedroni (2000; 2001) for estimating long run relation coefficient has been used. Based on the estimation results in both country groups, corruption has positive effect on FDI and then effect of corruption on FDI turns to negative. In other words, for both country groups, nonlinear relation between corruption and FDI has been extrapolated. Lastly in the study, to determine the way of relation between corruption and FDI, panel VEC causality test was applied for both country groups and it was identified that there is a one-directional causality relation from corruption to FDI.

It is precipitated that for both country groups corruption effects FDI negatively in the long run when the analyses were evaluated. As stated in the literature regarding this issue, existence of positive or negative relation has been mentioned. This study is different from studies in the literature with result, first corruption increases (positive) FDI in the long run but after a period a break takes shape and corruption decreases and FDI increases (negative). It is thought that this result made an important contribution to literature made on this subject. But which justifications can be used to explain these empirical evidences?

Transition economies transforms from centralist order, public property outweighs and government weighted production resources to countries where economic freedom is important and distribution of resources are in free market. The aim of this process is to reduce public ownership and role of government and to implement private property and market economy outrightly in these countries. As noted earlier, during transition process in economic field, reforms to promote investors and to constitute an economic system that confidential are concentrated on. According to the empirical evidences acquired, in the first years of this countries' process, a positive relation between corruption and FDI has been found. This result means corruption increases FDI in countries which non- institutionalized and free market isn't up and running. After a certain period, it has been observed that while corruption decreases, FDI increases and fraction takes place in the study for g-both country groups. This result can be explained by institutional arrangements which reduce corruption in the long run and are implemented during transition period. Fundamentally, in the long run existence of private property, evolution and development of democratic institutions and free markets might show up as critical factors for host countries' FDI. Therefore, the legal arrangements that provide opportunity to change system of corruption and resumption of corruption become more of an issue.

Consequently, foreign firms are looking for countries that have influential and consistent struggle against corruption and bribery and less social conflict to minimize the risk of investment on host country, to assure intellectual property rights and not to bear the extra cost. Decreasing corruption in host countries should be evaluated as an important strategy to increase FDI inflows. Furthermore, country's risk and level of uncertainty depend on political stability and democratic environment of the country. Recently, foreign investors also have been checking trustworthiness of political regime in host country. Within this framework, reviewing the host countries' governments' policies aimed at foreign investors should be considered as a substantial component.

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