

RESEARCH ARTICLE

# The Relationship between FDI and Regional Economic Integrations: An Empirical Analysis of BSEC Countries

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## Abstract

This study investigates the effect of regional economic integration on foreign direct investment (FDI) in Organization of Black Sea Economic Cooperation (BSEC) countries not only with theoretical point of view but also with empirical evidence. The effect of regional economic integration on FDI was empirically analyzed for 9 countries and the time period cover in this study is after the BSEC has been implemented. The model is estimated with panel data methods using a dummy variable for the regional economic integrations for the 1994-2013 periods. This paper is concerned with the effect of membership to regional economic integrations together with other factors has increased FDI flows. With the current increasing regionalization trend, this paper analyses that in order to attract higher amounts of FDI, developing countries should stress regional economic integration, or at least they should make regional trade agreements or free trade agreements.

**Keywords:** Foreign Investment, Economic Integration.

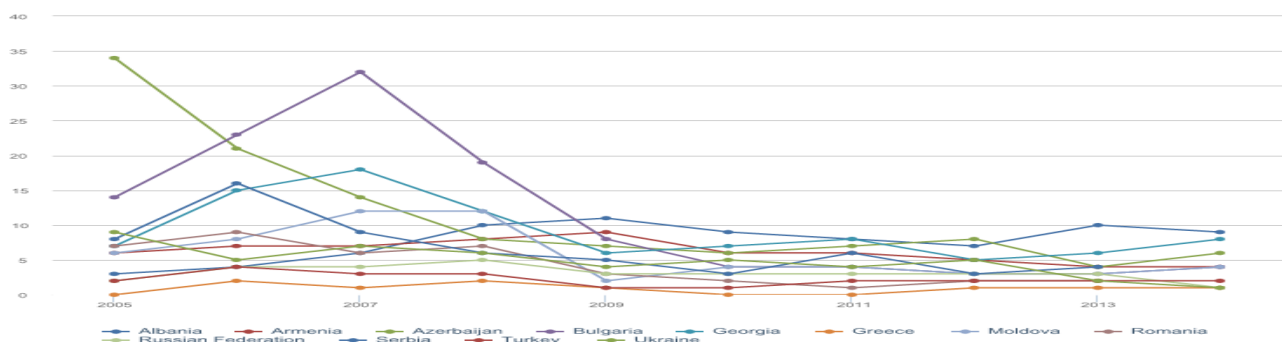
**JEL:** F15, F21, C23

## Introduction

Organization of Black Sea Economic Cooperation (BSEC) represents a region of some 350 million people with a foreign trade capacity of over USD 300 billion annually. Also it is the second-largest source of oil and natural gas along with its rich proven reserves of minerals and metals. Therefore it is becoming Europe's major transport and energy transfer corridor [1]. The main characteristic of these countries is their physical proximity. The Black Sea Region

has long been a very critical and important economic area; that is why some regional arrangements are brought to the agenda right after the end of Cold War. Besides this, Turkey is a founding *member of* integration.

Table 1 shows the international FDI net inflows (% of GDP) to BSEC countries for the period 2005-2013 based on World Economic Indicators.



**Figure 1: Foreign direct investment, net inflows (% of GDP)**

Source: World Economic Indicators, 2015

As seen from the Table 1, FDI flows are very important percentage of GDP for each BSEC countries. FDI flows were studied by many economists, such as Balassa Ozawa [2-3] and Dunning [4] in the frame of the causes, directions and consequences. Although the effect of regional integration on trade flows has been written much, there has been done little work on its effect on FDI.

Our analysis adds two innovative aspects to the rather extensive existing literature on the topic. First of all, current empirical evidence is limited to single country studies and thus can not address the issue of the effect of the implementation of BSEC on FDI for the entire area, as well as examining for any potential differential effects among the member countries. Theoretically, the expected impact of BSEC on inward FDI in the entire area is positive, but ambiguous for individual member countries. The increased importance of FDI flows in BREC member economies is a reflection of increased trade and investment linkages among them, increased specialization of production and increased commercial relations with non-BREC countries. FDI flows tend to be very volatile and pro-cyclical. The stock of FDI at any given point, on the other hand, is the accumulation of past FDI flows. Hence, inward and outward direct investment stocks in relation to GDP provide a more accurate and reliable picture of trends in the true importance of direct investment in BREC member economies. Second, to the best of our knowledge, we are the first to examine the BSEC countries effects.

The following section includes theoretical approaches to the effects of regional economic integration on FDI followed by a review of empirical literature. The third section concerns the empirical analysis, and the final section is the conclusion.

## **Theoretical Framework and Literature Review**

FDI is defined as “an investment involving a long-term relationship and reflecting a lasting interest and control by a resident entity in one economy ([the] foreign direct investor or parent enterprise) in an enterprise resident in an economy other

than that of the foreign direct investor ...” [5].

FDI has played a crucial role in the formation of supply chains and production networks in developnig countries. Therefore, a membership of an economic integration should improve an economy’s business environment, which in turn makes it more interesting for foreign investors. FDI pertains to international investment in which the investor obtains a lasting interest in an enterprise in another country. Involvement in supranational economic structures significantly lowers transaction costs between foreign production and export [6]. To overcoming the burden of trade barriers; membership of an economic integration is the main channel and offers access to additional markets. It is performed by buying or constructing a factory in a foreign country or adding improvements to such a facility, in the form of property, plants, or equipment. Regional economic integrations (REIs) lead reductions of regional trade barriers and investment restrictions.

The fluctuations of inward FDI would probably not be evenly distributed, but rather correlated with the geographical areas especially the strongest locational advantages. In this sense, [7] has emphasized to “investment creation” as a likely response to the trade diversion brought about by regional investment agreements. The term refers to the strategic investment responses by foreign firms who lose export markets when their former customers turn to suppliers based in the region, because regional trade is not obstructed by trade barriers [8].

Lack of progress in multilateral collaboration in trade and investment points out the significance of regional economic integration efforts in many regions. Key mechanisms for such integration are regional trade agreements and regional economic integration organizations [9].

These agreements on integration focus on FDI flows from outside and inside a region by providing a common FDI policy regime or

a single integrated market for trade and investment. Regional integration efforts generally lead to increased FDI by opening sectors to foreign investment and arranging policies for the treatment of investors. This is prompted by the indirect effect of trade

liberalization and market integration, efforts to harmonize general policy frameworks in participating countries, including for investment and direct cooperation on investment projects at the regional level [10].

**Table 1. Mechanisms of the impacts of regional economic integration on FDI**

Mechanisms	Effects on intraregional FDI flows	Effects on FDI inflows from outside the region
Investment liberalization and/or protection provisions in regional agreements	Enables/encourages increased flows from regional investors per se, including existing third-country investors from outside the region	Enables/encourages increased flows from third-country investors not currently established inside the region
Trade and market integration provisions in regional agreements	Enables the reorganization of production at the regional level, including investments and divestments	Attracts new third-country investment through enlarged markets, including within global value chains
Policy harmonization implicit in the implementation of regional agreements	Encourages investment through reductions in transaction costs and perceived risk	Enables/encourages increased inflows if harmonization encompasses investment regulations applicable to third-country investors
Broader pan-regional investment projects (e.g. infrastructure or research and development) made possible by, or integral to, regional agreements	Provides increased investment opportunities	Provides increased investment opportunities

Source: [9]

The current wave of regional integration schemes has greatly reduced barriers to trade and FDI within the integrated areas [11], [12].

Economic integration may motivate firms from outside countries to invest in the integrated economic area as the regional economic integration increases the “size of the country” [13]. In one of the most popular books on Multinational Enterprises James Markusen (2002) points, among the main stylised facts on foreign direct investment, evidence that “FDI is positively related to the existence of trade barriers”. But the recent engine of growth is FDI. FDI has actually taken place in parallel with the surge of regional economic integration in which barriers to trade between member countries are progressively reduced. And REIs also may increase the barriers to trade for outsiders [14-15].

Theoretically, there are three broad categories of provisions through which REIs influence FDI flows in the integrating regions: preferential trade terms, investment-related stipulations and other forms of cooperation [16]. Empirical evidence and initial modelling work suggest that regional economic integration can provide an

important stimulus not only to trade, but also to foreign direct investment within the region concerned.

The interaction between REIs or/and RIAs and FDI has been examined in recent studies, which, suggest that there is a positive impact of economic integration on FDI. [17] pointed out that the economic integration has a positive or negative effect on FDI among the member states. They suggested that the first positive effect is that; when considering international vertical division of labor strategy, different stages of intermediate goods are produced in different countries. So, firms can obtain profits through relatively low local prices. According to the vertical integration strategy of international firms, trade barriers will increase the transaction costs of vertical FDI. After a free trade agreement (FTA) is signed, reduction of tariffs and trade barriers allow firms to reduce transaction costs, which will lead firms to increase FDI. Second positive effect is that; the signing of the FTA integrates each country's divergent investment regulations and will also promote increased FDI. But the negative effect is that; when vertical FDI and merchandise trade share a mutual substitution relationship, then after the FTA

is signed, inter-regional tariffs decrease and trade barriers are reduced, leading to a reduction in FDI. [18] extends the theory of multinational corporations to explore the effects of internal trade liberalization by a group of countries on the level of inward direct investment. The majority of these findings consider some regions are more successful in attracting FDI than others. In addition, the most important regional economic integration is implemented between members of the same block of economies.

The empirical literature presents that RIAs enhance the flows of FDI. [19] suggest three major explanations for the increases in foreign investment in Argentina since the early 1990s. The most important attraction for foreign investors was arguably Argentina's comprehensive privatization program, which opened several public service industries to foreign investment. Several public companies in the telecommunications and transportation sector were sold to foreign investors. Sinn [20] assert in their influential article that the stock of FDI in the CEECs is still far lower than it should be, compared with countries having a similar level of income. Blomström [21] investigate the channels of RIAs which affect FDI in their detailed study. Buckley [22] find that United States' investments into Canada were positively impacted by the FTA between the two countries.

Motta et. al. [23] aimed to point the effects of economic integration on oligopolist multinationals in a three country setup: two integrating (host) countries member of a RIA, and a country source of FDI which is external to the same RIA. They distinguish between the effects of market accessibility and the impact of individual country size. Their results are consistent with the evidence of parallel trade and FDI flows.

Puga et. al. [24] examine a multy-country case a core-periphery model in order to encompass in the analysis of RIAs also a country source of FDI. They provide evidence that in a 'hub and spokes' arrangement of trade liberalisation firms

will tend to concentrate in the 'hub', since firms located in 'spoke' countries are penalised from a lower demand by both consumers and firms in other spokes, as compared to that enjoyed by hub firms.

Levy et. al.[17] indicate that joining an FTA, on average, increases bilateral FDI between its members by about 27 percent. This positive effect suggests that any potential loss of FDI due to the tariff-jumping argument is more than offset by other effects that operate in the opposite direction.

Dion [25] has mainly concern on the trade led productivity and propose a model whose purpose is the measurement of the effect of a regional trade area (RTA) and European Union (EU) on the growth of its members.

Globerman et. al. [26] conclude that FDI into Canada increased significantly after the implementation of the CUSFTA and NAFTA[27] . Eden et al. [28] study post-NAFTA FDI and find intra-NAFTA FDI flows in Mexico to be significantly lower than extra-NAFTA FDI flows after controlling for other explanatory factors.

Feils et. al. [29] examine the the impact of NAFTA on inward FDI in Canada, Mexico and the United States by country of origin between 1981 and 2001. The extra-NAFTA countries of origin are Australia, Belgium, Denmark, France, Germany, Ireland, Italy, Japan, Netherlands, Norway, South Korea, Sweden, Switzerland and the United Kingdom. FDI from inside NAFTA and these countries accounted for 98 percent of total FDI stock in Canada, 88 percent in Mexico and 92 percent in the United States at the end of 2000. They find that NAFTA had a positive and significant effect on inward FDI into the region. Besides this, some other papers have evidences of positive relationship, for the variables of integration and FDI flows, i.e., in [8], [30] and [31] for NAFTA.

Hejazi et al. [27], on the other hand, show a negative impact of NAFTA on inward FDI into Canada. Feils [15] look at FDI inflows to Canada over the 1980–1994 period and do not find any significant effect on FDI inflows due to the CUSFTA.

Walch et. al. [32] comprises 11 countries with a successful record of EU integration: Bulgaria, Croatia, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia. The analysis of the determinants of FDI flows to CESEE transition economies covers data from 1995 to 2011. The main contribution of this study to literature; a higher level of integration with the EU help to improve foreign investments, but this 'EU bonus' lost its power during the financial crisis.

According to Nunnenkamp [33], full membership in the European Union should not be expected to have crucial FDI-promoting effects. First, most of the accession countries will already have signed Europe Agreements with the EU, and this has brought them to the top of the list of the EU's preferential trading partners. Second, investors tend to seek first-mover advantages. Therefore, the incentive for investing in a potential EU member country is far stronger during the negotiations on accession than after the Union has actually been joined.

An extraordinary study of Eckert [34] argue that the EU integration process also leads to cultural convergence. As a result, foreign companies might no longer find it necessary to overcome cultural differences by investing abroad. Other studies reported similar positive scientific findings about EU and FDI flows as in [35-36] [10].

Nguyen [37] examined the effects of the ASEAN on Vietnam's economy for the purpose of to discuss impact of the trade liberalization and regional economic integration. The simulation analysis shows that the regional economic integration generally has a positive impact. It both enhances welfare and improves income-distribution for Vietnam.

Levy [38] address the issue of regional integration and FDI at a basic level, using dummies for regions, applying the analysis to the OECD database covering 60 countries.

The regressions control for a number of factors and use a variable for market size. Other researchers have examined individual regions; Waldkirch [31] and Monge-Naranjo [30] for NAFTA, [39] for MERCOSUR, and [50] for several regions.

Dennis [14] focus on how liberalization of MENA's trade regime within the context of the regional trade agreements and trade facilitation reforms which may help to revive MENA trade and thus contribute to welfare, economic growth and job creation prospects in the region. This study will take into account the contribution of improvements to trade facilitation on MENA trade and growth performance.

Hartzenberg [41] has mainly talks about role of regional economic integration in Africa. According to authors, "There is much support from African governments for regional integration and it is an important component of their development strategies. Traditionally, the European Union was Africa's most important trade, investment and Development partner".

Also, according to the data on 122 developing nations from 1970 to 2000, Büthe [42] suggested that; countries which joined to the WTO and other similar economic integration organizations had more opportunities to receive foreign investors' attention in comparison to countries that did not participate in such economic integration. Therefore, the amount of FDI into these countries significantly increased.

Guerin [43] also examined FDI flows from developed countries into developing emerging countries from 1992 to 2004, and discovered that economic integration had a positive influence on FDI. Similar positive significant results are also seen in studies of [44-48]. The above discussion of the literature suggests that, though regional integration will have a complex and diverse effect on the motivations for FDI, the overall impact of the economic reform and liberalization in the region should be positive.

## Model Specification, Metodology and Data

In this paper, we assess the impact of economic integration on FDI flows by addressing BREC countries. Studies of the impact of economic integration on intra-regional investment are more rare and generally constrained by data shortages. Empirical studies of FDI and Regional Integration can be divided into: those that describe the investment-related provisions present in a growing number of RTAs with a prediction of how these should affect FDI and those that base their findings on econometric models explaining FDI where one of the explanatory variables is a “black box” 0/1 dummy or binary variable describing whether or not a country is a member of a region.

Current study primarily focuses on the investigation of main factors that drive inflow of foreign direct investments in BSEC Countries. The following model is formulated to determine the impact of different variables on FDI.

$FDI_{it} = f(GDP, INF, ER, PCGDP, Dummy)$   
Where,

FDI; is Foreign Direct Investment, net flows (BOP, current US\$). The dependent variable, FDI, is measured as the net foreign direct investment inflow and is a widely used measure.

Gdp; is Gross Domestic Product (constant 2005 US\$) proxy of economic growth. Economic growth as measured by GDP seems to be the most robust FDI determinant in econometric studies. This is the main determinant for horizontal FDI. It is irrelevant for vertical FDI. Jordaan [49] mentions that FDI will move to countries with larger and expanding markets and greater purchasing power, where firms can potentially receive a higher return on their capital and by implication receive higher profit from their investments. Theoretically the level of FDI is positively related to the size of a foreign market. Therefore, we expect that the larger the market size, other things being constant, the more FDI the

sector should attract. Thus the market size factor in our expectation should be positively related to the level of FDI.

Inf; is consumer price index proxy of macroeconomic stability. Indicates rising country's macroeconomic risk. The level of FDI is negatively related to the inflation rate.

Pcgdp; is per capita Gross Domestic Product (constant 2005 US\$) proxy of market Size: The size of the host market, which also represents the host country's economic conditions and the potential demand for their output as well, is an important element in FDI decision-makings. Moreover [50] argued that FDI responds positively to the market size ‘once it reaches a threshold level that is large enough to allow economies of scale and efficient utilization of resources’. The level of FDI is positively related to the pcgdp.

Er; is official exchange rate (LCU per US\$, period average) proxy of investment climate. The level of FDI is positively related to the exchange rate.

Dummy is membership of economic integration (membership of BSEC). The level of FDI is positively related to the membership of an economic integration.

Our empirical model can be summarized by the following econometrical equation

$$FDI_{i,t} = \alpha + \alpha_1(GDP)_{i,t} + \alpha_2(INF)_{i,t} + \alpha_3(PCGDP)_{i,t} + \alpha_4(ER)_{i,t} + \alpha_5(dummy) + \varepsilon_{i,t}$$

i stands for the cross sectional individual (i.e. country) and t for the time period.

We are interested in finding out how FDI depends on the economic growth, market size, macroeconomic stability, exchange rate and membership of an economic integration. Current study excludes some countries – Georgia, Hellenic Republic and Serbia -as they do not have sufficient data for analysis. Final sample of the study includes a strongly balanced panel data of 14 countries covering same period from 1994-2013. Out of these 14 countries; 9 countries are members of BSEC

from 1992 including Albania, Armenia, Azerbaijan, Bulgaria, Moldova, Romania, Russian Federation, Turkey, Ukraine and rest of the 5 are non-members including Cyprus, Kazakhstan, Kyrgyz Republic, Mongolia, Pakistan. Data are taken from World Development Indicators 2014- World Bank Database. All estimations were carried out using Stata. In all there are 240 observations. Current study is employing the panel data which contains same cross-sectional units over a same time period. Panel data is a blend of both times series and cross-section data [51].

Gujarati [52] stresses the advantages of using panel regression. There are three kinds of advantages. First advantage of using panel methods is that it is more informative with variability, reduce collinearity among the variable and give more degree of freedoms to the data. Second advantage is that it could construct better detection and measurement of effects that simply could not be observed in pure cross-sectional or pure time series data. Third advantage is that panel data is more informative than that of a time series since it gives more data points which are able to be analyzed. Panel series provide the date to be available into several thousand units and this would minimize the bias that might result if individuals or firms level data are divided into broad aggregates.

There are several estimation techniques for conducting analysis with panel data but the two most known ones are the fixed effects model (FEM) and random effects model (REM). In FEM, the intercept in the regression model is allowed to differ among individuals in recognition to the fact that each individual or cross-sectional unit may have some unique characteristics of its own.

At the same time, REM assumed that the intercept of an individual unit is a random drawing from a much larger population with a constant mean value. A fixed effect model assumes differences in intercepts across groups or time periods, whereas a random effect model explores differences in error variances. The Hausman specification test compares the fixed versus random effects.

Fixed effects model is simply a model in which slope coefficients are constant while intercept varies across the cross-sectional unit in a panel. On the other hand random effects model is a model which treats cross-sectional unit as well as variation within cross-sectional unit in the model. The Random Effect Model (REM) estimates when unobserved heterogeneity is uncorrelated with any one of the explanatory variable in the model.

Dougherty [16] recommended criteria for choosing a regression model in panel data, if authors choose random sample from population then they must utilize both panel data approaches fixed effects model and random effects model. Hausman test (the test statistics developed by Hausman has an asymptotic Chi-Square ( $X^2$ ) distribution) was used in order to decide which estimation technique is more appropriate between FEM and REM. If this test provides significant result then they should reject the following null hypothesis, "difference in coefficients not systematic". If the result of the Hausman's specification test gives an insignificant result then it is more appropriate to use random effects model instead of fixed effects model. Specifically, if it is assumed that  $\varepsilon_{it}$  and the  $X$ 's (explanatory variables) are uncorrelated, REM may be appropriate, whereas if  $\varepsilon_{it}$  and the  $X$ 's are correlated, FEM may be appropriate [52].

As in current study authors have drawn a random sample of 14 countries over the same time period of 1994-2013. So, along with recommended criteria for selecting an appropriate model for random sampling, authors have utilized both panel data approaches fixed effects model and random effects model then Hausman's specification test was used to choose one most appropriate model from two models.

## Empirical Results

After having the thorough discussion regarding the methods used in the current study we have reached on the following results. Several types of panel unit root tests are undertaken in this paper. The [54]

statistics, which has a common unit root process as its null hypotheses. The [55], and the Phillips-Perron (PP) Fisher Chi-square [56] tests where the null hypothesis is an individual unit root process. The LLC test indicates that are stationary in levels, while the remaining variables are integrated of order one [I(1)] except lngdp. (see Table 2). The IPS and PPF tests indicate that all

variables are stationary in levels except lngdp, lnpcgdp and er while all variables are integrated of order one [I(1)]. The LLC and IPS test with the model of constant and trend indicates that all variables are non-stationary in levels, while the all variables are integrated of order one [I(1)]. The PPF test indicates that lngdp and lninf are stationary in levels, while the remaining variables are integrated of order one [I(1)].

**Table 2: Unit-root test statistics**

Variables	LLC		IPS		PPF	
	Constant	Constant and Trend	Constant	Constant and Trend	Constant	Constant and Trend
FDI	0.21231 (0.5841)	0.60225 (0.7265)	-2.44630 (0.0072)	2.07412 (0.9810)	79.2402 (0.0000)	34.4405 (0.1867)
LNGDP	-1.60798 (0.0539)	2.93894 (0.9984)	2.76528 (0.9972)	0.77673 (0.7813)	0.38092 (1.0000)	69.9304 (0.0000)
LNINF	7.24052 (1.0000)	7.07485 (1.0000)	-11.3652 (0.0000)	-8.55792 (0.0000)	3687.47 (0.0000)	257.890 (0.0000)
ER	-3.48626 (0.0002)	-0.21652 (0.4143)	-1.35525 (0.0877)	1.70348 (0.9558)	68.8011 (0.0000)	15.1803 (0.9765)
LNPCGDP	2.72155 (0.9968)	-1.87465 (0.0304)	6.14960 (1.0000)	0.39601 (0.6540)	0.42016 (1.0000)	16.8865 (0.9508)
ΔFDI	-7.21566 (0.0000)	-6.11419 (0.0000)	-6.98122 (0.0000)	-5.74148 (0.0000)	259.641 (0.0000)	257.890 (0.0000)
ΔLNGDP	-0.96999 (0.1660)	-4.64722 (0.0000)	-2.40812 (0.0080)	0.76335 (0.7774)	121.301 (0.0000)	59.1542 (0.0005)
ΔLNINF	-12.5253 (0.0000)	-8.86760 (0.0000)	-13.4177 (0.0000)	-8.88470 (0.0000)	3687.47 (0.0000)	342.123 (0.0000)
ΔER	-4.43642 (0.0000)	-4.23440 (0.0000)	2.75501 (0.0029)	-0.91516 (0.1801)	94.0953 (0.0000)	62.7898 (0.0002)
ΔLNPCGDP	-5.76782 (0.0000)	-4.69969 (0.0000)	-2.66525 (0.0038)	-0.16500 (0.4345)	82.6364 (0.0000)	54.1337 (0.0022)

Note: The test statistics are reported above, along with the probability values in parentheses.

This section provides a detailed discussion of the regression results for both fixed effect model and random effect model in this study. The next two tables depict the

outcomes of both panel data approaches. Table 3 describes the results of fixed effect model.

**Table 3: Fixed effects (FE) model estimations**

Variables	Coefficient	Std. Error	t	P-Value
LNGDP	1,9538	1,09211	1,79	0,075
LNINF	0,3568	0,44595	0,80	0,424
LNPCGDP	0,0238	0,00429	5,56	0,000
ER	0,6822	0,35533	1,92	0,056
Constant	-50,360	26,6092	-1,97	0,050

Not: R-sq within=0.1473, between= 0.0032, overall= 0.0182  
F statistics=11,27 and Prob. > F=0,0000

From Table 3 it is clear that all the coefficients are statistically significant except variable of inflation. Variables of are GDP, per capita GDP and exchange rate are significant in this model while the variable of Inflation is not significant.

There is a positive relationship between FDI and GDP, ER and PCGDP in the model. Therefore, the lower percentage of inflation would be resulting higher FDI. The negative

results imply that macroeconomic stability is the crucial determinant of FDI. The positive result implies that an increase (decrease) in GDP, PCGDP and ER enhances (reduce) the dependent variable FDI.

The within R2 of this model is 14 %. Within R2 means that independent variables explain 14 % variations in the FDI in this panel from year to year. Model is a good fit as F test 11.27 is significant at 1% level of significance.



**Table 4: Random effects (RE) model estimations**

Variables	Coefficient	Std. Error	z	P-Value
LNGDP	1,128951	0,1057508	10,68	0,000
INF2	-0,000862	0,0003366	-2,56	0,010
LNPCGDP1	0,155254	0,0824401	1,88	0,060
ER	0,001878	0,0006332	2,97	0,003
DUMMY1	0,168492	0,4186398	0,40	0,687
Constant	-8,053228	2,545135	-3,16	0,002

Note: R-sq within=0.3413, between= 0.7873, overall= 0.4976  
Wald chi2=143.43, Prob.>chi2=0.0000

Results of random effects model is provided in Table 4. Variables size of GDP, INF, ER and PCGDP are significant in this model while dummy is not significant. There is a positive relationship between FDI and GDP, PCGDP and ER variables. On the other hand there is negative relationship between FDI and INF. The within R2 of this model is 0.34 %, between R2 is 78% while overall R2 of panel is 49%. This model is also significant as its Wald chi2 143.43 is also significant at 1% level of significance. Within R2 of random effects model is higher as compared to fixed effects model, and also alternatively between R2 and overall R2 of random effects model are greater than fixed effects model.

As both of the above model are significant at 1% level of significance, so it is very hard to decide which model is appropriate. To handle this problem authors run a Hausman's specification test in order to decide one appropriate model out of two possible options. To choose FEM or REM the Hausman test should be used which has an asymptotic chi-square distribution. The statement of hypothesis related to FEM and ECM (Error Component Model).

H0: FEM and ECM estimators do not differ substantially

H1: FEM and ECM estimators differ substantially

**Table 5: Hausman test results**

	Fixed Effects	Random Effects	Difference	Prob>Chi2
LNGDP	1,9538	1,1289	1,0875	
LNINF	0,3568	-0,0008	0,0042	0
ER	0,0238	0,0187	0,3456	
LNPCGDP	0,6822	0,1552	0,2569	

The outcomes of this test are provided in Table 5. These outcomes suggest that most appropriate model is fixed effect model. The table 5 shows the value of chi-square which indicates that we reject the null hypothesis that the country random effect model is more consistent and accept the alternative hypothesis that the country fixed-effects model is consistent and efficient.

## Conclusion

In this study, the effect of regional economic integration on FDI was empirically analyzed for 14 countries and the time period cover in this study is after the BSEC has been implemented. In an attempt to examine the determinants of FDI in BSEC countries, the panel data techniques have been employed. The model is estimated with panel data methods using a dummy variable for the regional economic integrations for the 1994-2013 periods. Table 3 presents the estimate

of fixed effects as well as random effects models for the selected countries. Two most applicable panel data techniques (fixed effects and random effects models) are utilized to investigate the determinants of profitability and Hausman's specification test recommended that fixed effects model is most appropriated model in this study. The fixed effects model has four significant variables which include economic growth, market size and exchange rate while only one variables inflation is insignificant.

This paper is concerned with the effect of membership to regional economic integrations has not increased FDI flows. This study has been yet one more attempt at shedding light on the relationship between FDI and economic integration. According to the empirical results, it is shown that the alleged positive link between FDI and economic integration can not proved in

BREC countries. This study can be improved upon and extended in several ways. The dataset of reference should be extended as new data become available, particularly with respect to the countries of Europe and the countries belonging to integration.

Given the lack of consensus regarding the effects of FDI; the results obtained seem to indicate that the effects of economic integration organizations on FDI are

dependent on the variables used. In the examples that have obtained opposite results, we realize that they use different variables and / or almost always more variables. This conclusion may also indicate that studies which have not obtained positive effects have neglected channels through which REIs can affect FDI flows. In cases where there is the inclusion of more variables it appears that the purpose of this addition is to include domestic conditions of the country under study.

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