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FOREIGN DIRECT INVESTMENT INWARD AND FOREIGN DIRECT INVESTMENT OUTWARD; EVIDENCE FROM PANEL DATA

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This paper examines empirically the association between Foreign Direct Investment (FDI) inward and FDI outward. Using a panel data set for 35 economies over the period 1981-2004 as well as the methodology of panel cointegration and panel causality tests, the empirical findings show that FDI inward does exhibit a significant relationship with FDI outward. This evidence is supportive to the indirect link of the development path theory.

JEL classification Numbers: *F21; C33*

Key words: *FDI inward; FDI outward; transitional economies; panel cointegration; panel causality.*

I. INTRODUCTION

No direct links between Foreign Direct Investment (FDI) inward and FDI outward have been established in the relevant literature both on a theoretical and on an empirical level. By contrast, indirect approaches assume that the association between the growth process and FDI inward contributes to growth, which in turn, contributes to FDI outward. To this end, Dunning (1988 and 1993) presents the investment development path approach. According to these theoretical reasons, FDI outward begins in the second level of the development process. Once the country reaches a threshold growth point then exports, which are closely related to FDI, are encouraged. Most importantly, in the third level, FDI outward gets stronger. This FDI outward component is associated with activities related to the searching of new markets and resources, i.e., rational FDI. The activities, in turn, are concentrated upon certain sectors of the economy, such as durable goods (automobile industries, electrical appliances etc). Finally, in the fourth level of this development process, FDI outward gets even stronger and is heavily concentrated on hi-tech products that have embodied high levels of R & D (information technology, new methods of production etc). The latter activities aim at enhancing the international competitive position of the head

quarter (mother) firms. This process occurs because the mother firm has serious incentives to keep investing in high tech activities in its international branches. This will motivate more multinational branches and finally, a cumulative competitive advantage will result.

In this setting, Blomstrom (1986) for Mexico, Dees (1998) for China, De Mello (1996) for Latin America countries, Kokko (1994) for Mexico and Uruguai, Imbriani and Reganati (1997), Nadiri (1991), Blomstrom, Lipsey and Zesan (1994) for developing economies, Borenzstein, De Gregorio and Lee (1995), and Moran (1998) have provided empirical evidence in favor of this indirect link between FDI inward and FDI outward.

This study focuses on 35 economies. The objective of this paper is to investigate the presence as well as the causative effects between FDI inward and FDI outward in those economies. The main contribution is that the paper uses a unique panel data set of economies over the period 1981-2004, while it makes use of advanced estimation techniques to reach fruitful results. Thus, for the first time the presence and most importantly the direction of a relationship between FDI inward and FDI outward in developed and developing economies is investigated by applying the novel methodology of panel cointegration and panel causality. There are strong reasons to believe that there is significant heterogeneity in cross-country FDI inward-FDI outward relationship and that no panel data estimations will lead us to misleading inferences due to the neglect of such heterogeneity. Applying panel cointegration techniques will allow us to take into consideration the presence of heterogeneity in the estimated parameters and dynamics across countries. This will enable us to generate more credible results since panel data estimation enables a researcher to capture certain interesting time-series relations that only cross-sectional analysis cannot do it. The paper is organized as follows. Section 2 presents the empirical analysis and discusses the empirical findings, while section 3 concludes the paper.

II. EMPIRICAL ANALYSIS

Data

Annual data on inflows and outflows of FDI (FDI-IN and FDI-OUT, respectively) in constant 1995 U.S. dollars to allow for differences in purchasing power across countries and to avoid any arbitrary conversions via official exchange rates and on GDP (Y) were obtained over the years 1981 to 2004. The sample contains the following economies: **America**=United States, Canada, Mexico, Brazil, Argentina, Chile-**Europe**=Belgium, Finland, France, Germany, Iceland, Italy, Netherlands, Spain, Sweden, Switzerland, United Kingdom-**Asia**=Japan, Australia, New Zealand, Mainland China, Thailand, India, Singapore, South Korea-**Africa**=Egypt, Morocco, South Africa, Tunisia, Algeria. All data have

Panel Integration Analysis

The null hypothesis of non-stationarity versus the alternative that the variable is stationary is tested using the group mean panel unit root test (or 't-bar' test) of Im, *et al.* (1995, 1997). This test is based on the Augmented Dickey-Fuller (ADF) statistic for each country (Dickey and Fuller, 1981) and allows each member of the cross section to have a different autoregressive root and different autocorrelation structures under the alternative hypothesis. Im *et al.* show that the test statistic has a standard normal distribution and significantly negative test statistics indicate rejection of the unit root null hypothesis. The results are reported without and with a trend and are presented in Table 1. The hypothesis that variables y, fdi-in, and fdi-out (in levels) contain a unit root cannot be rejected at the 1% significant level and in all types of samples. When first differences are used, unit root nonstationarity is rejected at the 1% significant level, suggesting that these variables are I(1) variables. These results open the possibility of cointegration among them.

Dynamic Heterogeneity

An issue that it is of major concern is the heterogeneity of the countries included in this data set. In particular, through time and across countries, the effects on the FDI inward-FDI outward relationship of the different macroeconomic policies implemented, as well as the effects of the institutional frameworks established in each country should be expected to be diverse.

Heterogeneity could be explained by the fact that the countries under study are characterized by heterogeneous institutional environments, income levels (mainly before their political liberalization), reform paths, local business operating conditions, transport and communication infrastructures, judiciary systems, quality bureaucratic levels, educational systems (Mauro, 1995; La Porta *et al.*, 1998; Wei, 2000). Moreover, Singh and Jun (1996) and Gylfason and Zoega (2001) identify factors such as heterogeneous labor costs, available units of input factors (labor and capital), endowments of natural resources, economic and political risks proxied by price stability records, strategies of economic reforms, removal of trade controls, removal of exchange rate restrictions, and removal of FDI restrictions.

In the statistical framework of this study, these issues can be resolved by first testing for heterogeneity and then by controlling for it through appropriate techniques. The dynamic heterogeneity, i.e. variation of the intercept over countries and time, across a cross-section of the relevant variables can be investigated as follows. In the first step, an ADF(n) equation for each relationship in the panel is estimated; then, the hypothesis of whether regression parameters are equal across these equations is tested. Next, a similar test of parameter equality is performed by estimating an n-order autoregressive model for each

Table 1
Panel Unit Root Tests

Variables	*Without Trend*	*With Trend*
All countries		
y	-1.25(2)	-1.52(2)
Δy	-4.17(1)*	-4.62(1)*
fdi-in	-1.19(3)	-1.31(3)
Δfdi-in	-4.36(2)*	-4.88(2)*
fdi-out	-1.32(3)	-1.58(3)
Δfdi-out	-4.73(2)*	-4.93(2)*
America		
y	-1.16(3)	-1.34(3)
Δy	-4.25(1)*	-4.58(1)*
fdi-in	-1.27(3)	-1.46(3)
Δfdi-in	-4.49(2)*	-4.81(1)*
fdi-out	-1.33(3)	-1.40(3)
Δfdi-out	-4.57(2)*	-4.84(2)*
Europe		
y	-1.26(2)	-1.54(3)
Δy	-4.49(1)*	-4.83(1)*
fdi-in	-1.23(3)	-1.39(3)
Δfdi-in	-4.51(1)*	-4.65(2)*
fdi-out	-1.30(3)	-1.46(3)
Dfdi-out	-4.45(2)*	-4.89(2)*
Asia		
y	-1.04(3)	-1.22(3)
Δy	-3.97(1)*	-4.18(1)*
fdi-in	-1.17(3)	-1.36(3)
Δfdi-in	-4.23(2)*	-4.77(1)*
fdi-out	-1.19(3)	-1.45(3)
Δfdi-out	-4.47(2)*	-4.88(2)*
Africa		
y	-1.28(3)	-1.58(3)
Δy	-3.87(1)*	-4.33(1)*
fdi-in	-1.16(3)	-1.59(3)
Δfdi-in	-4.18(2)*	-4.73(1)*
fdi-out	-1.27(3)	-1.65(3)
Δfdi-out	-4.11(2)*	-4.79(2)*

examined as another measure of dynamic heterogeneity. White's tests for group-wise heteroscedasticity are employed to serve this objective. The results of this procedure are reported in Table 2 for the relationship between FDI inward and FDI outward as well as between FDI inward, income, and FDI outward. The empirical findings indicate that the relationship under investigation is characterized by heterogeneity of dynamics and error variance across groups, supporting the employment of panel analysis for all types of country samples.

Table 2
Tests of Dynamic Heterogeneity Across Groups

All countries			
	ADF(3)	AR(3)	WHITE'S TEST
fdi in–FDI-out	12.35*	20.96*	54.74*
fdi in, fdi-out, growth	13.64*	23.38*	60.61*
America			
	ADF(4)	AR(3)	WHITE'S TEST
fdi in–FDI-out	14.21*	24.55*	48.91*
fdi in, fdi-out, growth	15.41*	28.07*	58.72*
Europe			
	ADF(4)	AR(4)	WHITE'S TEST
fdi in–FDI-out	14.84*	23.74*	57.91*
fdi in, fdi-out, growth	15.27*	25.68*	64.05*
Asia			
	ADF(3)	AR(4)	WHITE'S TEST
fdi in–FDI-out	11.83*	21.36*	49.07*
fdi in, fdi-out, growth	13.82*	25.45*	56.39*
Africa			
	ADF(3)	AR(3)	WHITE'S TEST
fdi in–FDI-out	10.46*	17.06*	41.66*
fdi in, fdi-out, growth	12.71*	21.20*	48.74*

The ADF column reports the parameter equality test (F test) across all relationships in the panel. The AR column reports the F test of parameter equality conducted in a fourth-order autoregressive model of the relationships under study. Finally, the White's test reports White's test of equality of variances across the investigated relationships in the panel. The White's test was computed by regressing the squared residual of the ADF regression on the original regressor(s) and its(their) square(s). The test statistic is (NT) x R^2, which is x^2 distributed with the number of regressors in the second regression as the degrees of freedom.

* Significant at 1%.

Panel Cointegration Analysis

Once the order of stationarity has been established, one can move to a panel cointegration approach, developed by Pedroni (1999). The panel cointegration

FDI inward and FDI outward

$$\text{fdi-out}_{it} = \beta_{0i} + \beta_{1i}\,\text{fdi-in}_{it} + \varepsilon 1_{it} \quad (1)$$

and

FDI inward, Income, and FDI outward

$$\text{fdi-out}_{it} = \beta_{0i} + \beta_{1i}\,y_{it} + \beta_{2i}\,\text{fdi-in}_{it} + \varepsilon 2_{it} \quad (2)$$

where i = 1 ... N countries and t = 1 ... T year observations. The terms $\varepsilon 1_{it}$ and $\varepsilon 2_{it}$ are the deviations from the modeled long-run relationship. If the series are cointegrated, this term will be a stationary variable. Thus, stationarity can be achieved by establishing whether $\rho 1_i$ in:

$$\varepsilon 1_{it} = \rho 1_i\,\varepsilon 1_{i(t-1)} + \xi 1_{it} \quad (3)$$

or $\rho 2_i$ in:

$$\varepsilon 2_{it} = \rho 2_i\,\varepsilon 2_{i(t-1)} + \xi 2_{it} \quad (4)$$

are unity. The null hypothesis, associated with the test procedure, is that $\rho s_i = 1$, with s = 1,2. This implies that the null hypothesis associated with the test procedure is equivalent to testing the null of nonstationarity (no cointegration) for all i. Pedroni (1999) developed four panel cointegration statistics and three group mean panel cointegration statistics. The cointegration results are reported in Table 3. The results reject the null hypothesis of no cointegration in both cases, confirming that in both testable relationships the panel is stationary.

Given cointegration, we estimate the long-run relationship through the Dynamic OLS (DOLS) approach provided by Stock and Watson (1993). This approach regresses a I(1) variable on other I(1) variables plus lags and leads of the first-differences of the I(1) variables. The inclusion of the first-differenced variables eliminates any possible bias resulting from correlation between the error term and the I(1) variables. We also calculate corresponding robust standard errors through an adjustment suggested by Newey and West (1987).

All countries

$$\text{fdi-out}_{it} = \underset{(4.36)^*}{0.035} + \underset{(3.95)^*}{0.0583}\,\text{fdi-in}_{it}$$

$R^2 = 0.583$ $Fs^2_y = 85.46[0.00]$

and

$$\text{fdi-out}_{it} = \underset{(3.79)^*}{0.047} + \underset{(4.62)^*}{0.389}\,y_{it} + \underset{(5.07)^*}{0.0485}\,\text{fdi-out}_{it}$$

$R^2 = 0.742$ $F\sigma^2_y = 93.51$ [0.00]

America

$$\text{fdi-out}_{it} = \underset{(4.71)^*}{0.027} + \underset{(4.28)^*}{0.0671}\,\text{fdi-in}_{it}$$

$$\text{fdi-out}_{it} = \underset{(4.11)^*}{0.062} + \underset{(4.28)^*}{0.477}\,y_{it} + \underset{(4.79)^*}{0.0536}\,\text{fdi-out}_{it}$$

$R^2 = 0.783$ $F\sigma^2_y = 87.22[0.00]$

Europe

$$\text{fdi-out}_{it} = \underset{(4.28)^*}{0.039} + \underset{(4.47)^*}{0.0603}\,\text{fdi-in}_{it}$$

$R^2 = 0.591$ $F\sigma^2_y = 89.68[0.00]$

and

$$\text{fdi-out}_{it} = \underset{(3.94)^*}{0.053} + \underset{(3.88)^*}{0.429}\,y_{it} + \underset{(4.51)^*}{0.0497}\,\text{fdi-out}_{it}$$

$R^2 = 0.683$ $F\sigma^2_y = 81.37[0.00]$

Asia

$$\text{fdi-out}_{it} = \underset{(4.48)^*}{0.024} + \underset{(3.73)^*}{0.0519}\,\text{fdi-in}_{it}$$

$R^2 = 0.572$ $F\sigma^2_y = 75.05[0.00]$

and

$$\text{fdi-out}_{it} = \underset{(4.52)^*}{0.031} + \underset{(4.09)^*}{0.357}\,y_{it} + \underset{(4.27)^*}{0.0428}\,\text{fdi-out}_{it}$$

$R^2 = 0.634$ $F\sigma^2_y = 79.83[0.00$

Africa

$$\text{fdi-out}_{it} = \underset{(3.81)^*}{0.017} + \underset{(4.07)^*}{0.0279}\,\text{fdi-in}_{it}$$

$R^2 = 0.381$ $F\sigma^2_y = 53.22[0.00]$

and

$$\text{fdi-out}_{it} = \underset{(3.91)^*}{0.023} + \underset{(4.14)^*}{0.193}\,y_{it} + \underset{(4.30)^*}{0.0197}\,\text{fdi-out}_{it}$$

$R^2 = 0.384$ $F\sigma^2_y = 58.05[0.00]$

where the F-test indicates that the coefficients are jointly significant across countries (the estimates of the leads and lags included in the regression are available upon request). Figures in parentheses denote t-statistics while those in brackets indicate p-values. Finally, an asterisk denotes significance at 1%. The empirical findings show that in all cases the FDI inward coefficient is statistically significant at the 1% level. Moreover, in the trivariate system, the income coefficient is positive, indicating that FDI outward responds positively to income. Furthermore, in the case of the African countries output exerts the lowest impact on FDI outward; nevertheless, it remains statistically

Table 3
Panel Cointegration Tests

FDI inward-FDI outward	
All countries	
Panel v-stat	-3.39877*
Panel rho-stat	-3.21387*
Panel pp-stat	-3.13546*
Panel adf-stat	-3.01398*
Group rho-stat	-3.15739*
Group pp-stat	-3.32873*
Group adf-stat	-3.41274*
America	
Panel v-stat	-4.73923*
Panel rho-stat	-4.55921*
Panel pp-stat	-3.29734*
Panel adf-stat	-3.13471*
Group rho-stat	-4.37892*
Group pp-stat	-4.49596*
Group adf-stat	-4.56390*
Europe	
Panel v-stat	-4.43928*
Panel rho-stat	-4.18763*
Panel pp-stat	-4.09773*
Panel adf-stat	-3.98475*
Group rho-stat	-4.22367*
Group pp-stat	-4.15599*
Group adf-stat	-4.23985*
Asia	
Panel v-stat	-4.18745*
Panel rho-stat	-4.06738*
Panel pp-stat	-3.94582*
Panel adf-stat	-3.74298*
Group rho-stat	-4.02875*
Group pp-stat	-3.89465*
Group adf-stat	-3.90875*
Africa	
Panel v-stat	-3.79845*
Panel rho-stat	-3.40983*
Panel pp-stat	-3.18524*
Panel adf-stat	-3.04583*
Group rho-stat	-3.25892*
Group pp-stat	-3.31846*

FDI inward, income growth, FDI-outward	
All countries	
Panel v-stat	-4.25993*
Panel rho-stat	-4.12487*
Panel pp-stat	-3.81009*
Panel adf-stat	-3.49823*
Group rho-stat	-4.03483*
Group pp-stat	-4.09286*
Group adf-stat	-3.95673*
America	
Panel v-stat	-4.28651*
Panel rho-stat	-4.14940*
Panel pp-stat	-4.00722*
Panel adf-stat	-3.69212*
Group rho-stat	-4.10849*
Group pp-stat	-4.13739*
Group adf-stat	-4.04138*
Europe	
Panel v-stat	-4.14559*
Panel rho-stat	-4.03229*
Panel pp-stat	-3.76298*
Panel adf-stat	-3.39662*
Group rho-stat	-4.00559*
Group pp-stat	-3.90732*
Group adf-stat	-3.78776*
Asia	
Panel v-stat	-3.67329*
Panel rho-stat	-3.41221*
Panel pp-stat	-3.20648*
Panel adf-stat	-3.11873*
Group rho-stat	-3.33098*
Group pp-stat	-3.29894*
Group adf-stat	-3.25550*
Africa	
Panel v-stat	-3.24786*
Panel rho-stat	-3.09883*
Panel pp-stat	-3.02985*
Panel adf-stat	-2.89773*
Group rho-stat	-3.10683*
Group pp-stat	-3.15376*
Group adf-stat	-3.19906*

Panel Causality

As cointegration is confirmed, we proceed to estimate causality using the Pooled Mean Group (PMG) estimator of Pesaran, Shin and Smith (1999) to account for the panel data causal relationships. This estimator is suitable when variables are cointegrated. This provides justification for examining the direction of the causal links among the variables under consideration through an error correction VAR (ECVAR) model. The model includes the leads of the regressor.

Panel 1. FDI outward and FDI inward

Considering that the cointegrating equation is:

$$\text{fdi-out}_{it} = \theta_{0i} + \theta_{1i}\ \text{fdi-in}_{it} + u_{it} \quad (5)$$

and the associated augmented-by-leads autoregressive distributed lag (AADL) equations are described by a (1,1,1) model:

$$\text{fdi-out}_{it} = \mu_i + \delta_{10i}\ \text{fdi-in}_{it} + \delta_{11i}\ \text{fdi-in}_{i,t-1} + \delta_{12i}\ \text{fdi-out}_{i,t-1} + \delta_{13i}\ \text{fdi-in}_{i,t+1} + v1_{it} \quad (6)$$

and

$$\text{fdi-in}_{it} = \mu_i + \delta_{20i}\ \text{fdi-out}_{it} + \delta_{21i}\ \text{fdi-out}_{i,t-1} + \delta_{22i}\ \text{fdi-in}_{i,t-1} + \delta_{23i}\ \text{fdi-out}_{i,t+1} + v2_{it} \quad (7)$$

the error correction equations yield:

$$\Delta\text{fdi-out}_{it} = \varphi_1\ (\text{fdi-out}_{i,t} - \theta q_{0i} - \theta_{1i}\ \text{fdi-in}_{it}) - \delta_{30i}\ \Delta\text{fdi-in}_{it} + \eta 1_{it} \quad (8)$$

and

$$\Delta\text{fdi-in}_{it} = \varphi_2\ (\text{fdi-in}_{i,t} - \theta_{0i} - \theta_{1i}\ \text{fdi-out}_{it}) - \delta_{40i}\ \Delta\text{fdi-in}_{it} + \eta 2_{it} \quad (9)$$

All countries

fdi-in→fdi-out φ_1 coefficient = - 0.018, asymptotic t-statistic: -4.23*
fdi-out→fdi-in φ_2 coefficient = - 0.011, asymptotic t-statistic: -4.53*

America

fdi-in→fdi-out φ_1 coefficient = - 0.057, asymptotic t-statistic: -4.45*
fdi-out→fdi-in φ_2 coefficient = - 0.039, asymptotic t-statistic: -4.21*

Europe

fdi-in→fdi-out φ_1 coefficient = - 0.038, asymptotic t-statistic: -4.51*
fdi-out→fdi-in φ_2 coefficient = - 0.026, asymptotic t-statistic: -3.87*

Asia

fdi-in→fdi-out φ_1 coefficient = - 0.041, asymptotic t-statistic: -3.69*
fdi-out→fdi-in φ_2 coefficient = - 0.027, asymptotic t-statistic: -4.22*

Africa

fdi-in→fdi-out φ_1 coefficient = - 0.052, asymptotic t-statistic: -4.49*
fdi-out→fdi-in φ_2 coefficient = - 0.007, asymptotic t-statistic: -1.23

The error correction coefficients (φs) are again negative and statistically

FDI inward, i.e. there are feedback effects between the two variables under study. The only exception is the African case in which FDI outward does not seem to contribute to FDI outward.

Panel 2. FDI outward, income, and FDI inward

Having established that FDI outward is also cointegrated with income and FDI outward, it is appropriate to examine the associated multivariate causality relationship. Considering that the cointegrating equation is:

$$\text{fdi-out}_{it} = \theta_{0i} + \theta_{1i}\ y_{it} + \theta_{2i}\ \text{fdi-out}_{it} + u_{it} \quad (10)$$

the associated AADL equations are also described by a (1, 1, 1) model:

$$\text{fdi-out}_{it} = \mu_i + \delta_{10i}\ \text{fdi-in}_{it} + \delta_{11i}\ \text{fdi-in}_{i,t-1} + \delta_{12i}\ y_{it} + \delta_{13i}\ y_{i,t-1} + \delta_{14i}\ \text{fdi-out}_{i,t-1} + \delta_{15i}\ \text{fdi-in}_{i,t+1} + \delta_{16i}\ y_{i,t+1} + \varepsilon 1_{it} \quad (11)$$

and

$$\text{fdi-in}_{it} = \mu_i + \delta_{20i}\ \text{fdi-out}_{it} + \delta_{21i}\ \text{fdi-out}_{i,t-1} + \delta_{22i}\ y_{it} + \delta_{23i}\ y_{i,t-1} + \delta_{24i}\ \text{fdi-in}_{i,t-1} + \delta_{25i}\ \text{fdi-in}_{i,t+1} + \delta_{26i}\ y_{i,t+1} + \varepsilon 2_{it} \quad (12)$$

the error correction equations yield:

$$\Delta\text{fdi-out}_{it} = \varphi\ (\text{fdi-out}_{i,t} - \theta_{0i} - \theta_{1i}\ y_{it} - \theta_{2i}\ \text{fdi-in}_{it}) - \delta_{30i}\ \Delta\text{fdi-in}_{it} - \delta_{40i}\ \Delta y_{it} + \varepsilon 3_{it} \quad (13)$$

and

$$\Delta\text{fdi-in}_{it} = \varphi\ (\text{fdi-in}_{i,t} - \theta_{0i} - \theta_{1i}\ y_{it} - \theta_{2i}\ \text{fdi-out}_{it}) - \delta_{60i}\ \Delta\text{fdi-out}_{it} - \delta_{70i}\ \Delta y_{it} + \varepsilon 4_{it} \quad (14)$$

All countries

fdi-in→fdi-out φ coefficient = – 0.024, asymptotic t-statistic: -3.74*
fdi-out→fdi-in φ coefficient = – 0.018, asymptotic t-statistic: -4.08*

America

fdi-in→fdi-out φ coefficient = – 0.073, asymptotic t-statistic: -3.69*
fdi-out→fdi-in φ coefficient = – 0.044, asymptotic t-statistic: -3.48*

Europe

fdi-in→fdi-out φ coefficient = – 0.046, asymptotic t-statistic: -3.93*
fdi-out→fdi-in φ coefficient = – 0.038, asymptotic t-statistic: -4.24*

Asia

fdi-in→fdi-out φ coefficient = – 0.047, asymptotic t-statistic: –3.52*
fdi-out→fdi-in φ coefficient = – 0.039, asymptotic t-statistic: –3.61*

Africa

fdi-in→fdi-out φ coefficient = – 0.056, asymptotic t-statistic: –3.58*
fdi-out→fdi-in φ coefficient = – 0.012, asymptotic t-statistic: –1.12

The error-correction coefficients (φs) are again negative and statistically

except in the case of African countries, where FDI outward again does not cause FDI inward.

III. CONCLUDING REMARKS AND SUGGESTIONS FOR FUTURE RESEARCH

This study examined the relationship between FDI outward and FDI inward for 35 economies. The evidence from the statistical analysis suggests that FDI outward does have a significant long-run relationship with FDI inward both on a bivariate level and on a trivariate level, with the income variable explicitly introduced.

Future research could investigate other factors that might affect or determine these two variables. In particular, future research could investigate the effects of human capital on the above studies relationship, since FDI is a means for the adoption and implementation of new technologies and therefore, there will be required training to prepare the labor force to work with the new technologies. Also, it can be examined whether the relationship under investigation depends on the level of education of the host country, the levels of economic and financial development of the host country and its trade openness.

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