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ABSTRACT

PURPOSE

Emerging economies viz., Brazil, China, India, Mexico and South Africa have seen a tremendous increase in the FDI inflows in the last one decade. Amongst all, the FDI inflows of China witnessed sharp rise from 1992. As on 2006, China stood as the world's second largest recipient of FDI inflows (AT Kearney Report, 2006), leaving behind many emerging economies in the race of attracting FDI inflows.

Attracting FDI inflows into the country depends upon number of macro economic, socioeconomic, cultural, political and firm specific issues. But, the present study narrows down its scope to the important factor, "market behavior of other countries" in attracting FDI inflows. Based on this premise, we examine the relationship between the rapid surge in Chinese FDI inflows with that of FDI inflows in Brazil, India, Mexico and South Africa.

In this backdrop, this study focus on one of the most important questions: Is there any long run relationship associated with FDI inflows of emerging economies with China.

DESIGN / METHODOLOGY / APPROACH

The methodology adopted includes generating the modus operandi using cointegration analysis for linearity test, followed by unit root tests for stationarity test, which would allow obtaining some general characterization of association of FDI inflows of emerging economics with China in the long run. In the process we develop four different econometric models one each for Brazil, India. Mexico and South Africa.

ORIGINALITY

We contribute to the economic literature on two counts. Firstly, we differ from other studies whose focus was largely on studying the determinants of FDI inflows in emerging economies and compare the results. We rather investigate to find out whether the FDI inflow of one affects the others. Finally, there are no studies on this topic in the context of emerging economies with China and to the best of the authors' knowledge this is first such an attempt.

FINDINGS

The claims brought forward by this study are mixed. The study finds that FDI inflows of only Brazil and India are cointegrated with Chinese FDI inflows in the long run. The study fails to establish any long run equilibrium relation between Chinese FDI inflows and FDI inflows of Mexico and South Africa..

Therefore, based on these findings we can conclude that the FDI inflows of China can be used to predict the FDI inflows of Brazil and India.

KEYWORDS

FDI inflows, Emerging economies, China & Cointegration.

JEL CLASSIFICATION

F21, O57, E44 & C22

PAPER TYPE

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ARE EMERGING ECONOMIES FDI INFLOWS COINTEGRATED WITH FDI INFLOWS OF CHINA? – AN EMPIRICAL INVESTIGATION

01. Introduction

Research on FDI is one of the most interesting topics in the area of international business and trade. FDI assumes lot of importance because it can influence many macro economic variables of a host country. It has its impact on employment, prices, exports, imports, exports, Balance of Payments, economic growth, competition, production and so on and so forth (Krishna Chaitanya V. & Bitzenis, A, 2006).

There are many studies which have highlighted in their studies related FDI as to what are the key factors which drive FDI inflows into the country (Dunning 1979, Chakrabarti, 2001, Dedek and Novak, 1998, Lankes and Venables, 1997, Elteto and Sass, 1998). However, there are also studies which have shown that the growing markets are aspire to be the hosts of FDI inflows. The studies supports these view include Galego et al. (2004), Merlevede and Schoors (2004), Janicki and Wunnava (2004), Carstensen and Toubal (2003), found that the market considerations were the most robust determinant among the traditional variables.

Similarly, there is also a lot of literature on FDI inflows in emerging markets and its importance to the economy. Notable among such studies are, Klaus E Meyer (2005), Moran, T.H. (2002). There are also studies related to specific regions and countries in emerging economies. The study of Ting Gao (2005) deals with the FDI inflows into South East Asia from OECD nations. Similar such study of Mahendra P lama (2004) discusses the FDI regimes in South Asia. Nobel laurate Klein Lawrence.R, (2004) draws some important comparisons between India and China. The study by Arindam Banik, Pradip K Bhaumik, Sunday O Iyare (2004) shows that the neighbourhood concepts are widely applicable in different contexts – particularly for China and India, and partly in the case of the Caribbean. There are significant common factors in explaining FDI inflows in select regions. While a substantial fraction of FDI inflows may be explained by select economic variables, country-specific factors and the idiosyncratic component account for more of the investment inflows in Europe, China and India. In another study by Karl P. Sauvant (2005) the light is shed on ho BRIC economies are thriving to attract FDI inflows.

The concentration of FDI inflows of China has become an interest of debate. There are many studies which have focused among why FDI inflows flowing into China are much higher. The study by Kevin Honglin Zhang (2001) shows

how and why MNEs select China as their investment destination to other emerging economies.

There are also certain classic studies which have delt with the rise of China interms of attracting FDI inflows at the cost of other most important emerging economies like India, Brazil, Mexico, Russia, Egypt, South Africa and ASEAN nations, to name a few. These studies include, Benoît Mercereau (2005) explains how FDI inflows are coming to China at the expense of 14 Asian economies. The study was conducted using the time period 1984 to 2005.

In very similar such by Busakorn Chantasasawat, K.C. Fung, Hitomi Iizaka & Alan Siu (2005) answers the question: is China diverting FDI from other developing countries? Their findings suggest that FDI is positively related to the levels of inward direct investments of economies in East and Southeast Asia, while it is mostly insignificant for Latin American economies. The level of Chinese FDI is negatively related to the direct investment into these economies as shares of total foreign direct investments in the developing countries; The PRC Effect is generally not the most important determinant of inward direct investment for these economies. Market size and policy variables such as openness and corporate tax rates tend to be more important.

In another such study by Barry Eichengreen, Hui Tong (2007) show that China's rapid growth and attractions as a destination for FDI also encourages FDI flows to other Asian countries, as if producers in these economies belong to a common supply chain. There is also evidence of FDI diversion from OECD recipients.

Most of the studies in this area which are highlighted above related to emerging economies speak about attracting FDI inflows and its importance. Similarly, there are also studies related to China and its affect on other emerging economies in the literature. However, there are seldom studies, which have looked at the long run linear relationship between FDI inflows of China and other important emerging economies like Brazil, India, Mexico and South Africa. Taking this into account, we try to fill this exiting gap in the economic literature related to FDI.

Thus, our major objective of the study is to investigate the linkage of FDI inflows between China and four other emerging economies, viz., Brazil, India Mexico and South Africa.

02. i. Research Variables & Econometric models

In this section, we explain the variables, that are considered for this study ,their selection and data sources. Based on it, the paper then provides empirical evidences through econometric estimates of the models. The main objective of

the paper is to test for the presence of long run and linear relationship between the FDI inflows of Brazil, India, Mexico and South Africa with that of Chinese FDI inflows. Thus, we include FDI inflows in US $ millions for all the countries selected in the study. We then introduce four different models for each country to test the long run relationship with FDI inflows of China.

02. ii. Data Sources

The study period selected is from 1970 to 2006. The data used in the study are mostly secondary in nature, collected from single authentic source for all the countries in the study. The sources comprise of website, United Nations Conference on Trade And Development (UNCTAD).

The UNCTAD compiles statistics on foreign direct investment (FDI). The data are presented in time series format and also in the form of databases for all the countries starting from 1970 to 2006. The data for FDI inflows for Brazil, China, India, Mexico and South Africa are present in the form of US $ millions in the databank on Foreign Investments. The exact place from where the data was secured was: http://www.unctad.org/Templates/Page.asp?intItemID=1923&lang=1

02. iii. Empirical Models

We estimate four models to examine the long run cointegration between FDI inflows of Brazil, India, Mexico and South Africa with China. The entire process of cointegration involves three major steps. These are:

a. In the first step, we try to find whether the series is stationary or otherwise. Thus, before proceeding ahead with the second stage, it is imperative to investigate the stationarity aspect of all the series. This exercise comprises two parts:

(i) Testing for a unit root, I (1), in each series and

(ii) Testing for the number of cointegrating vectors in the system, provided that we cannot reject the null hypothesis of unit root in each of the time series being studied.

(iii) In order to examine whether the two variables are integrated of the same order, each variable has to be differenced in order to turn the time series stationary.

b. In the second step, we examine the long run relationship between the variables using cointegration method by OLS regression analysis. This helps in setting the linear relationship between the two variables.

c. In order to fully satisfy the cointegration condition, we finally, test for the stationarity of the residuals of cointegrated model.

I. Models used for Step A:

Unit Root Test

Most of the time series variables are non-stationary and using non-stationary variables in the models might lead to spurious regressions (Granger 1969). The first or second differenced terms of most variables will usually be stationary (Ramanathan 1992). Thus, the first step in this exercise involves performing Dickey-Fuller (DF) Unit Root Test and subsequently based on the results, we might conduct Augmented Dickey-Fuller (ADF) test.

Dickey Fuller (ADF) test:

Let the variables for the test be Y_t, the DF Unit Root Test are based on the following three regression forms:

i. Without Constant and Trend:

$$\Delta Y_t = \varphi Y_{t-1} + \partial_t \quad \text{..... (1)}$$

ii. With Constant

$$\Delta Y_t = Ч + \varphi Y_{t-1} + \partial_t \quad \text{..... (2)}$$

iii. With Constant and Trend

$$\Delta Y_t = Ч + \beta T + \varphi Y_{t-1} + \partial_t \quad \text{..... (3)}$$

Testing Hypothesis for Unit Root:

H_0: ς = 0 (Presence of Unit Root)

H_1: ς = 1 (No Unit Root)

The Decision rule:

a. If ***t*** stat values **>** ADF critical value, = do not reject null hypothesis, i.e., unit root exists.

b. If ***t*** stat values **<** ADF critical value, = reject null hypothesis, i.e., unit root does not exist.

Augmented Dickey Fuller (ADF) test:

Sometimes, even after using the above mentioned three different propositions we may fail to attain the expected results, it subsequently leads to more confusion to determine whether the series is stationary or otherwise. In these circumstances, we use ADF method. This method takes the lag transformation into consideration. This can be specified as follows:

$$\Delta Y_t = Ч + \beta T + \varphi Y_{t-1} + Ґ_i \Sigma \Delta Y_{t-i} + \partial_t$$

..... (4)

II. Models used for Step B:

Econometric Model for estimating long run linear relationship:

In order to examine the long run association between FDI inflows of sample countries with China, we introduce econometric model using OLS. We create four models each for Brazil, India, Mexico and South Africa. Apart from this, we also introduce lag transformation of independent variable to see its affect on dependent variable. Therefore, we now proceed ahead in introducing econometric model to be estimated for the sample countries:

$$D(fdi_c)_t = \lambda + \xi_1 D(fdi_i)_t + \xi_2 D(fdi_i)_{t-1} + \mu_t$$

..... (5)

Where,

$D(fdi_c)_t$	= FDI inflows of China in first difference in *t* year
$D(fdi_i)_t$	= FDI inflows of "i"th country in first difference in *t* year
$D(fdi_i)_{t-1}$	= FDI inflows of "i"th country in first difference in *t-1* year
μ_t	= Error term
λ	= constant parameters;
ξ,	= hypothesis variable parameters;
i	= country (Brazil, India, Mexico & South Africa)

One of the significant feature of cointegration process using OLS is that the coefficient "ξ_1" should be statistically significant at appropriate confidence levels.

III. Models used for Step C:

Testing for Stationarity of Residuals:

As specified above, in the final stage, we look for the stationarity of residuals of the cointegrated model in stage – B.

$$\Delta \psi_t = \beta \psi_{t-1} + \sum_{i=1}^{p} \Delta \psi_{t-1} + \omega_t \quad \text{..... (6)}$$

Where,

Ψ_{t-1} = Residuals in *t-1* year
Δ = difference order
ϖ_t = Error term
p = lag value;
β = hypothesis variable parameters;
i = number of countries

It is extremely important that the coefficient "β" should be both negative and statistical significant at appropriate confidence levels for the cointegration condition to be satisfied. Then only the residual Ψ_t in the cointegrating equation will be stationary and the hypothesis of cointegration is accepted, otherwise it will be rejected.

03. EMPIRICAL RESULTS & ESTIMATIONS

i. Results of Unit root test

The results of the unit root tests are presented in Table-1 and we have used and Augmented Dickey Fuller tests to find the existence of a unit root in each of the time series of FDI inflows for China, Brazil, India, Mexico and South Africa. The results displayed in the second column of table1 are test statistic and the probability values in bracket.

Table: 1 - Unit root tests results for variable FDI Inflows at levels from 1970-2006

Variables	T-ADF Statistics	Critical Values	Decision	Durbin Watson	Lag Length*
CHINA	3.229137 (0.9993)	1% = -2.653401 5% = -1.953858 10% = -1.609571	Non Stationary	2.168869	09
		1% = -2.650145			

INDIA	6.640412 (0.9916)	5% = -1.953381 10% = -1.609798	Non Stationary	2.111274	08
BRAZIL	-0.451037 (0.5118)	1% = -2.636901 5% = -1.951332 10% = -1.610747	Non Stationary	1.787724	03
MEXICO	-1.177348 (0.0263)	1% = -2.647120 5% = -1.952910 10% = -1.610011	Non Stationary	2.162056	07
SOUTH AFRICA	0.528008 (0.8247)	1% = -2.636901 5% = -1.951332 10% = -1.610747	Non Stationary	1.499404	03

The results in Table 1 suggest that FDI inflows for all countries in the sample have found to be non-stationary in their current levels. This is because the T-ADF Statistic is less than their critical values and thus we accept the null hypotheses that the variables are not significantly different from zero. Then we advanced to include intercept and trend, but still found both the series to be non-stationary.

The table – 2 captures the results of unit root test at first difference level. All the variables are presented in first difference format respectively, with or without trend and constant. Apart from this, additional key statistics are also presented at the end of the table please specify.

Table: 2 - Unit root tests results for variable FDI Inflows at First Difference level

Variables	T-ADF Statistics	Critical Values	Decision	Intercept & Trend	Durbin Watson	Lag Length*
CHINA	-5.603007 (0.0000)	1% = -2.632688 5% = -1.950687 10% = -1.611059	Stationary	None	1.988530	00
INDIA	-1.545272 (0.1006)	1% = -2.664853 5%= -1.955681 10% = -1.581793	Stationary	Trend & Intercept	1.943479	08
BRAZIL	-4.263169 (0.0001)	1% = -2.636901 5% = -1.951332 10% = -1.610747	Stationary	None	1.800973	00
MEXICO	-1.648614 (0.1043)	1% = -2.660720 5%= -1.955020 10% = -1.609070	Stationary	Trend & Intercept	2.252801	07
SOUTH AFRICA	-13.48224 (0.0000)	1% = -2.636901 5% = -1.951332 10% = -1.610747	Stationary	None	1.483352	02

NOTE:

***:** Lag length selection is automatically done by AIC maxlag = 8.

The results suggest that FDI inflows for all the countries in the sample have been found to be stationary in first difference form as their critical values were less than the ADF Statistics at 1%, 5% and 10% levels of significance, that is, FDI

inflows at first difference are integrated of order 1 [I (1)]. Excepting for India and Mexico, the results for other countries have been found stationary without using trend and constant. The significance levels of all the countries are at 1%, while for India and Mexico the significance is found at 10% confidence level.

With these results, we now proceed to the second stage of our analysis that is, estimating the long run relationship between FDI inflows of Brazil, India, Mexico and South Africa with China.

ii. Cointegration Analysis for testing Linearity

We apply cointegration tests between FDI inflows of Brazil, India, Mexico and South Africa with China to detect any possible long-run equilibrium between the series. The cointegration test is the statistical implication of the existence of a long - run relationship between economic variables. The test stipulates that if variables are integrated of the same order, a linear combination of the variables will also be integrated of that same order. The idea behind cointegration analysis is that although macro variables may tend to trend up and down over time, groups of variables may drift together. If there is some tendency for some linear relationships to hold amongst a set of variables over long periods of time, then co integration analysis helps us to discover it.

Table: 3 – Results of cointegration test

Method: Least Squares
Study Period: 1970 - 2006
Included observations: 36
Newey-West HAC Standard Errors & Covariance

Dependent Variable	**CHINA FDI Inflows**	**CHINA FDI Inflows**	**CHINA FDI Inflows**	**CHINA FDI Inflows**
Variables	**MODEL - 1 INDIA**	**MODEL – 2 BRAZIL**	**MODEL – 3 MEXICO**	**MODEL – 4 SOUTH AFRICA**
C	**3951.480 **** 1678.3 (2.3544)	**2597.994 **** 1259.0 (2.0634)	**3746.792 **** 1446.8 (2.5896)	**3378.845 **** 1486.4 (2.2731)
FDI Inflows	**0.799012 **** 0.2929 (2.727)	**1.648489 **** 0.6096 (2.7039)	**-0.050236** 0.7070 (-0.0710)	**-1.275160** 1.6531 (-0.7713)
FDI Inflows (t-1)	**-5.837967 ***** 3.4693 (-1.6827)	**-0.552782 +** 0.3806 (-1.4521)	**-0.883279 +** 0.5901 (-1.4966)	**-1.007776** 1.1722 (-0.8596)
R-squared	**0.106762**	**0.355099**	**0.102120**	**0.044232**
Adjusted R-squared	**0.050935**	**0.314792**	**0.053502**	**0.015503**

Prob(F-statistic)	**0.164238**	**0.000895**	**0.358392**	**0.484886**
Durbin-Watson stat	**2.323002**	**1.795749**	**2.229015**	**1.976653**
Testing for Serial Correlation problem: Breusch-Godfrey Serial Correlation LM Test				
F-statistic Probability	**1.047661** **0.313968**	**0.295870** **0.590374**	**0.657732** **0.423545**	**0.005528** **0.941208**
Obs*R-squared Probability	**1.144175** **0.284772**	**0.330888** **0.565136**	**0.727172** **0.393801**	**0.006241** **0.937035**

NOTE:
***** Significant at 1% confidence level; ****** Significant at 5% confidence level
******* Significant at 10% confidence level; + Significant at 15% confidence level

The results capture the long run equilibrium relationship and linear combination between the variables discussed. We display four models, each capturing the cointegration test results for each country in our sample study. We also capture the important statistics at the end. All the models also check for the possible problem of serial correlation and present the results of Breusch-Godfrey Serial Correlation LM Test. To counter the problem of Heteroskedasticity, we display the results in Newey-West HAC Standard Errors & Covariance format.

To begin with India, we find that the FDI inflows of India in the current year(?) are cointegrated with the Chinese FDI inflows. This is statistically significant at 5% confidence level. We then introduced the lagged value of FDI inflows of India we notice that the FDI inflows of lagged values is negatively cointegrated with FDI inflows of China and this is found to be statistically significant at 10% confidence level. The Durbin Watson value for the model is 2.32 and the Breusch-Godfrey Serial Correlation LM test results show no sign of presence of serial correlation.

In the second model, we introduce the FDI inflows of Brazil at current and lagged years. We find that at both periods, the FDI inflows of Brazil are cointegrated with Chinese FDI inflows. However, the later is negatively cointegrated, while the former, positively. The current year FDI inflows are statistically significant at 5% confidence level; the significance level of lagged period is weak. The model also clears the problem of serial correlation.

We now move to the third and final models related to Mexico and South Africa. We find that for both countries, the FDI inflows in the current year make no significant impact on Chinese FDI inflows. However, at lagged one period, we find that FDI inflows of Mexico is statistically significant but at 15% confidence level.

One interesting finding which emerge of the results are the FDI inflows of all the merging economies at lagged values are negatively related to FDI inflows of China are very well statistically significant atleast for Brazil, India and Mexico to an extent. This can be because of the fact that China may be more stable and lucrative to the foreign investors than other emerging economies. If the foreign investors feel that China is more profitable than other emerging economies for their investments, the FDI inflows of China tend to increase and FDI inflows in other markets may remain constant or even decline.

The other possible reason could be that the investors might invest in other markets along with China. But after certain time period, the investors might realize that China is more profitable than others.

Otherwise, it may be because some other key important variables, which we have not considered here like marginal productivity, rate of growth of percapita GDP, Inflation rate, exchange rate, restrictions on capital account convertibility, government policies and political stability may influence the FDI inflows significantly more into China than the rest of the countries.

Thus, the findings revealed that the FDI inflows of India and Brazil are cointegrated with Chinese FDI inflows. To validate these results, we now proceed with the final stage in the analysis of testing for stationarity of the residuals of the cointegrated variables.

iii. Cointegration Analysis for testing Stationarity

As discussed in the earlier section, we now proceed to test for stationarity of the residuals of the cointegrated variables, FDI inflows of India and Brazil. If we find the residuals as stationary at the current levels it means that there exists cointegration between the same. In the stationarity test, we also included the residuals of Mexico, because, we found that the FDI inflows of Mexico in lagged value to be negatively cointegrated with FDI inflows of China. But the statistical significance was very weak at 15% confidence level. Thus, we wanted to ensure whether this can satisfy the third and final condition of cointegration. The results are displayed in table – 4.

Table: 4 – Testing for Stationarity of Residuals of FDI Inflows (at levels)

Variables	T-ADF Statistics	Critical Values	Decision	Intercept & Trend	Durbin Watson	Lag Length*
INDIA	-6.792049 (0.0000)	1% = -2.634731 5% = -1.951000 10% = -1.610907	Stationary	None	1.959344	00
BRAZIL	-4.549571 (0.0014)	1% = -3.724070 5% = -2.986225 10% = -2.632604	Stationary	Trend & Intercept	2.224262	08
MEXICO	-1.177348 (0.2127)	1% = -2.660720 5%= -1.955020 10% = -1.609070	Non Stationary	None	2.162056	07

NOTE:
***:** Lag length selection is automatically done by AIC maxlag = 8.

The results show that the residuals of India and Brazil models are negative and are statistically significant at 1% confidence levels at their current levels. While the residuals of Mexico, though negative, are not statistically significant. Thus, it fails to satisfy the condition of cointegration. Hence, we conclude that the FDI inflows of India and Brazil are cointegrated with the FDI inflows of China in the long run and exert a linear relationship.

04. Concluding Remarks: Policy Implications & Scope for Further Research

In the first place, the intention of the study is to examine the long run linear relationship between FDI inflows of China and emerging economies namely, Brazil, India, Mexico and South Africa. The entire study is based on the annual data of FDI inflows during the period 1970 to 2006. The econometric models used for the same is cointegration analysis to test the linearity of the series followed with unit root analysis to test the stationarity.

The empirical results at the first phase proved that none of the series is stationary and has to be differenced in order to convert the series into stationary. All these series are statistically significant at first difference order and are integrated in the same order. The next test of cointegration established that the FDI inflows of Brazil and India are said to have long run linear relationship with Chinese FDI inflows. While the results show no sign of long run relationship with FDI inflows of Mexico and South Africa. This is followed by the stationarity test of the residuals of Brazil and Indian models and unit root tests results show the signs of stationary at the current levels, confirming the presence of cointegration.

The policy implication of this could be that with FDI inflows of China can be used to predict the FDI inflows of Brazil and India in the long run. This means that FDI inflows of Brazil and India are dependent of the rise and fall in FDI

inflows of China. But, the most significant aspect to be underlined is that the FDI inflows of Brazil and India are also prone to fluctuations if it is found the same with China. This can be an important point to note for the policy makers in both these countries and vary about the movement of FDI inflows of China.

There is a scope for research to extend the same study further in two ways. Firstly, it would be interesting to add more emerging economies to the present list and examine whether FDI inflows of China in anyway affect the FDI inflows of the host nations in the long run.

Secondly, it would be interesting to find the affect of the size and quantum of China's FDI inflows on all other emerging economies. The scope of this study could be much broader in terms of analyzing the affect of differences in FDI size, combined market size, market growth, skills sets, cost of investments, cost of trade and most importantly the differentials in policy and political issues of China and other emerging economies in the world. This would perhaps give a much broader and clear picture of the affect of China FDI inflows on other emerging economies as a whole.

05. References

Arindam Banik, Pradip K Bhaumik, Sunday O Iyare (2004)" FDI into India, China and Latin America", Economic and Political Weekly, vol. IIXV.

Balasubramanyam V.N; Salisu M; David Sapsford (1996) "Foreign Direct Investment and Growth in EP and is Countries", Economic Journal, Vol. 106, No. 434. pp. 92-105.

Balasubramanyam V.N; Salisu M; David Sapsford (1998) Foreign direct investment as an engine of growth", The Journal of International Trade & Economic Development: An International and Comparative Review pp. 27-49

Benoît Mercereau (2005) "FDI Flows to Asia: Did the Dragon Crowd Out the Tigers?" IMF Working Paper series - WP/05/189

Barry Eichengreen, Hui Tong (2007) "Is China's FDI coming at the expense of other countries?" Journal of Japanese International Economies 21, pp.153–172

Busakorn Chantasasawat, K.C. Fung, Hitomi Iizaka & Alan Siu (2005) "Foreign Direct Investment in East Asia and Latin America: Is there a People's Republic of China Effect?" Research Paper Series No. 66, ADB Institute.

Chakrabarti, A. (2001) The Determinants of Foreign Direct Investment: Sensitivity Analysis of Cross-Country Regressions. Kyklos, 2001, Vol. 54 Issue 1.

Carstensen, K. & Toubal, F. (2003) FDI in Central and Eastern European Countries: A Dynamic Panel Analysis, Kiel, Christian-Albrechts-University Kiel.

Dickey D A and Fuller W A (1979), "Distribution of the Estimators for Autoregressive Time Series with a Unit Root", Journal of the American Statistical Association, Vol. 74, No. 366, pp. 427-431.

Dickey D A and Fuller W A (1981), "Likelihood Ratio Statistics for Autoregressive Time Series with a Unit Root", Econometrica, Vol. 49, No. 4, pp. 1057-1072.

Dunning, J.H. (1979) Explaining Changing Patterns of International Production: In Defense of Eclectic Theory. Oxford Bulletin of Economics & Statistics, Vol. 41 Issue 4, p.269 295
Enders W (1995), Applied Econometric Time Series, New York, Jhon Wiley and Sons.

Engel R F and Yoo B S (1987), "Forecasting and Testing in Cointegrated Systems", Journal of Econometrics, Vol. 35, pp. 143-159.

Elteto, A. & Sass, M. (1998) Motivations & Behavior by Hungary's Foreign Investors in Relation to Exports. Institute for World Economics, HAS, No.88, p.1-26.
Galego, A., Vieira, C. (2004) CEEC as FDI Attractors - A Menace to the EU Periphery? Emerging Markets Finance & Trade, Sep2004, Vol. 40, 5, p.74-91.

Granger, Clive, W. J.(1969). Investigating the Causal Relations by Econometric Models and Cross-Spectral Methods. Econometrica, 37(3): 424-38 (July).

Henrik Hansen and John Rand (2006) "On the Causal Links Between FDI and Growth in Developing Countries", Working Paper - United Nations University 2006, pp.21-41

Janicki, H.P. & Wunnava, P.V. (2004) Determinants of FDI: empirical evidence form EU accession candidates. Applied Economics. Vol36, No.5 p.399-523.

Klein Lawrence.R, (2004) “China & India – Two Asian Economic Giants, Two Different Systems”, Journal of Applied Econometrics & International Volume 4, No. 1, pp 7–19.

Kevin Honglin Zhang (2001) “What attracts MNEs to China”, Contemporary Economic Policy, Vol. 19 and No. 3, pp. 336-346.

Karl P. Sauvant (2005) “New Sources of FDI: The BRICs Outward FDI from Brazil, Russia, India and China”, The Journal of World Investment & Trade, pp. 639-671

Klaus E Meyer (2005) “Foreign Direct Investment in Emerging Economies”, Policy Discussion Paper - Emerging Markets Forum, Templeton College, Oxford.

Krishna Chaitanya V. & Bitnez .A (2006), “What Moves US FDI Inflows into India”, Working paper series 2006 No. 03.

Lankes, H.P. and Venables, A.J. (1996) Foreign direct investment in economic transition: the changing pattern of investments. Economics of Transition, Volume 4 (2), p.331-347.

Moran, T.H. 2002. Beyond sweatshops: Foreign direct investment and globalization in developing countries, Washington DC: Brookings Institution.

Mahendra P lama (2004), FDI Regimes in South Asia, South Asian Economic Journal, Vol. 1 No. 1, pp. 79-99.

Merlevede, B. and Schoors, K. (2004) Determinants of Foreign Direct Investment in Transition Economies. San Domenico di Fiesole, European University Institute

Ramanathan, R. (1992). *Introductory Econometrics with Applications*, Second Edition., Harcourt New York, Brace Jovanovich.

Ting Gao (2005) “Foreign direct investment from developing Asia: some distinctive features”, Economics Letters 86, pp. 29–35

World Investment Report (WIR) (2006), Geneva: United Nations Conference on Trade and Development (UNCTAD).

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