



## FACTORS DETERMINING THE DIRECT INVESTMENT IN EMERGING ECONOMIES



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### ABSTRACT

A better developed financial system improves capital allocation and stimulates growth. Capital flows to a country comes in three primary forms: Portfolio equity investment, Portfolio debt investment and Foreign Direct Investment (FDI). FDI is exhibited as a major source to economic growth in most of the developing countries. On this background, the main aim of this paper is to investigate the determinants of FDI in four (Asia, Africa, Europe and Latin America) regions. Secondary data from 1994 to 2013 is employed to analyze the objective in a panel data framework by employing Generalized-Method-of-Moments (GMM) technique. The main determinants of foreign direct investment are identified and the policy measures are provided based on the results.

**KEYWORDS:** Determinants, Economic Development, Foreign Direct Investment, Market Size, Capital Flows.

### INTRODUCTION

Foreign Direct Investment(FDI) is exhibited as a major source to economic growth in most of the developing countries. The overall benefits of FDI for the developing economies had been well documented. According to the United Nations (2001) the countries that usually attract large amounts of FDI are those with good economic conditions, with a high level of education, a high level of macroeconomic and political stability, favourable growth prospects and favourable investment environments, they are considered to be fast-growing economies. All these factors contribute to a higher level of economic growth. World FDI flows had been growing faster than the other economic aggregates such as world's production, the rate of capital formation and trade. A hectic competition prevails among the various nations throughout the world in attracting larger amounts of FDI inflows. Since 1980, FDI to developing economies has increased over 12-fold (World Bank, 1999). Today, FDI typically accounts for more than 60 percent of private capital flows to the developing world (Carkovic and Levine, 2005; World Bank, 2006).According

to UNCTAD, between 1990 and 1998, the capital inflow in developing countries was about \$2000 billion and more than \$700 billion has been direct investment.

An emerging market economy (EME) is defined as an economy with low to middle per capita income<sup>1</sup> (The term's meaning has since been expanded to include more or less all developing countries). Such countries constitute approximately 80 percent of the global population, and represent about 20 percent of the world's economies. FDI has become a key battleground for emerging markets and some developed countries. EMEs are characterized as transitional, meaning they are in the process of moving from a closed economy to an open market economy while building accountability within the system. One key characteristic of the EME is an increase in both local and foreign investment (portfolio and direct). Some emerging economies are fast becoming attractive destinations for multinationals' research and development centers, suggesting further gains for developing nations. Meanwhile, FDI as a share of GDI has grown rapidly,



becoming the largest source of capital moving from developed nations to developing ones. “FDI flows to developing economies proved to be much more resilient than flows to developed countries,” (UNCTAD, 2013).

On the above background the current paper attempts to identify the factors that determine the direct investment in the emerging economies for which a balanced<sup>2</sup> panel data for **Africa** (Egypt, Morocco, South Africa), **Asia** (China, India, Malaysia, Philippines, South Korea and Sri Lanka), **Europe** (Czech Republic, Hungary, Poland, Russian Federation, Turkey) **Latin America** (Brazil, Chile, Colombia, Mexico, Peru) is employed for the year 1994 to 2013. The present study is exclusively based on Secondary data source. The required data for the analysis was simultaneously taken from UNCTAD, World Bank, World Development Report, World Investment Report, World Development Indicators and International Financial Statistics. With the aid of STATA programme and by employing the General Methods of Moments technique (GMM) in a dynamic panel model<sup>3</sup> as introduced by Arellano and Bond (1991)<sup>4</sup>, propose using the lagged values of the explanatory variables in levels as instruments. Arellano and Bond (1991) advantage of this method over other commonly used panel data estimation techniques lies in its efficient use of the number of instruments generated for the endogenous explanatory variables. The lagged dependent variables help to control the omitted variable bias and the ability to lag explanatory variables helps to control the endogeneity bias<sup>5</sup>.

Because the markets are in transition and hence not stable it has brought about a huge change in the GDP level of the country with increased FDI. The reasons for concentrating on these emerging economies are: In 2000 private capital flows to the emerging market economies (EME) were almost US\$ 200 billion and FDI accounted for 60 percent of that amount [Carkovic and Levine (2002)]. In 2009 the capital flows to these economies has raised to US\$ 614 billion. (IMF 2009b). Developing countries received 52 percent of investors’ funds in 2012,

with 45 percent the year before. Investments into emerging nations in 2013 reached \$755 billion, according to the report. Hence, the countries selected provide a fair representation of the major developing areas in the world. The rest of the paper is organized as follows:- Section 2 presents the Econometric model and empirical methodology of the study. Empirical results and discussion are presented in Section 3. Finally, the concluding remarks are presented in Section 4.

**NOTE:**

<sup>1</sup> *Developing countries are those with a Gross National Income (GNI) per capita of \$9,265 or less. (The World Bank classifies economies as low-income (GNI \$755 or less), middle-income (GNI \$756–9,265) and high-income (GNI \$9,266 or more). Low-income and middle-income economies are sometimes referred to as developing countries. Reference: Global Economic Prospects and the Developing Countries, World Bank, 2002.)*

<sup>2</sup> *A panel data set contains repeated observations over the same units collected over a number of periods. A panel is described as **balanced** if there is an observation for every unit of observation for every time period*

<sup>3</sup> *uses lagged dependent variables*

<sup>4</sup> *They propose a two-step GMM estimator. In the first step, the error terms are assumed to be both independent and homoskedastic<sup>4</sup>, across countries and over time. In the second step, the residuals obtained in the first step are used to construct a consistent estimate of the variance-covariance matrix, thus relaxing the assumptions of independence and homoskedasticity. However, this ‘difference estimator’ has been found to exacerbate measurement error biases (Griliches and Hausman, 1986).*

<sup>5</sup> *The correlation between FDI and growth rate could arise from an endogenous determination of FDI, that is, FDI itself may be influenced by innovations in the stochastic process governing growth rates. For instance, any omitted factors that raise the rate of return on capital will also increase both the growth rate and the inflow of foreign direct investment simultaneously. In these circumstances there would exist a correlation between FDI and the error term, which would bias the estimated coefficients.*

**SECTION 2: ECONOMETRIC MODEL**

The Generalized-Method-of-Moments (GMM) estimators developed for dynamic panel data that were introduced by Holtz-Eakin, D., W. Newey and H. Rosen, (1990), Arellano and Bond (1991) and Arellano and Bover (1995) is used to check the impact of FDI on economic growth. The dynamic panel regression of GMM takes the following form:

$$\Delta(\text{FDI/GDP})_{it} = \delta_0 + \delta_1 \Delta(\text{FDI/GDP})_{it-1} + \delta_2 \Delta \log \text{GDP}_{it} + \delta_3 \Delta \text{OP}_{it} + \delta_4 \Delta \text{FD}_{it} + \delta_5 \Delta e_{it} + \delta_6 \Delta \text{IN}_{it} + e_{it}$$

Based on the earlier literature the major factors that are identified to influence the FDI inflow in the present study for the selected emerging economies are discussed below:

As it is standard in the literature, the dependent variable is the ratio of net inflow of FDI to GDP (Gross Domestic Product<sup>6</sup>) time  $t$ . FDI as a share of GDP has grown rapidly, becoming the largest source of capital moving from developed nations to developing ones. The reason is that FDI, via the national income accounting identifies itself as a component of GDP and thus partly endogenous within the GDP equation, which may bias the results in favor of a correlation between these two variables (since in most countries FDI is likely to be a nonstationary or explosive series); Therefore, as in many previous studies (Froot and Stein (1991), Singh and Jun (1995), Barrell and Pain (1999), Nair-Reichert and Weinhold (2001), Mody and Murshid (2002), Hansen and Rand (2006)), the FDI to GDP ratio (in percent) is used which is treated as endogenous variable of the system.

#### NOTE:

<sup>6</sup> The total market value of all final goods and services produced in a country in a given year.

The number of independent variables examined in many theoretical and empirical studies is very large, and they include not only economic but also social cultural and political aspects. The independent variables included in the analysis are as give below:

#### Market size (GDP):-

Among the traditional variables, GDP is widely used in the literature as a proxy for market size i.e. market size equals the logarithm of gross domestic product. The size of the market is one of the most important determinants of FDI. The net impact of market size on FDI is likely to be positive.

#### Openness of the Economy (OP):-

A high degree of openness is required for stimulating vertical which relies on substantial flows of intermediate inputs and goods in and out of the host country. Trade intensity in terms of either share of imports or exports (or both) to GDP (in percent) is used as a proxy for openness. The ratio is often interpreted as a measure of trade restrictions. The net impact of openness on FDI is uncertain.

#### Financial Development (FD):-

literature usually defines financial development as the improvement in the quantity, quality and efficiency of financial intermediary services (Calderon and Liu, 2003). A better developed financial system improves capital accumulation and stimulates growth. Hence domestic

credit to the private sector as a percentage of GDP is used as a proxy for financial development.

#### Market structure (e):-

exchange rate depreciation induces foreign investors' wealth to rise, enabling them to outbid their competitors abroad for information intensive assets having monitoring costs. Therefore aggregate FDI flows will increase in proportion to a depreciation of the domestic currency. The expectation of short term changes in exchange rates may influence the timing of investment transactions.

#### Macroeconomic stability(IN):-

One indicator of a stable macroeconomic environment is a record of price stability. A history of low inflation and prudent fiscal activity signals to investors how committed and credible the government is. To measure stability, the annual average inflation rate is used. In the present study, the consumer price index is considered as a proxy for Inflation rate .

#### Agglomeration effect:-

Agglomeration Effects is defined as the moving-three year average of contemporary and lagged total FDI inflows relative to respective host country GDP. To the extent that agglomeration effects make clustering attractive, their impact on both horizontal and vertical FDI will be positive. Here One-year lagged FDI to GDP ratio is used, for moving three years will cause to lose many data's. The net impact of agglomeration effects on FDI is positive. The country specific impact of FDI on GDP should vary systematically when these factors are included

### SECTION 3: REGRESSION RESULTS AND DISCUSSION

The empirical exercises performed indicate a number of results. It is very clear from the table 1 that the factors that contributes to FDI in all four regions are: lagged endogenous variable (agglomeration effect) and inflation rate. As expected the inflation is also negative and significant. A history of low inflation and prudent fiscal activity signals to investors how committed and credible the government is.

The coefficient of Openness for Asia and Africa is positive and significant. This reveals a positive association between FDI flows and free trade in Asia and Africa. One explanation for a negative relationship between private credit and the share of FDI in total is that often times corresponds which is an indication of the abundance of domestic capital. As such, foreign capital in the form of FDI would not be needed as much.

The Sargan and serial correlation tests as displayed in the table do not reject the econometric specification. (The Sargan test and the second order serial correlation test indicate that the model is correctly specified). The result reveals a significant negative first order serial correlation and the absence of second order serial correlation among residuals, indicating that the disturbances are not serially correlated, and hence, establishing the consistency of those estimators. In addition, the Sargan test indicates the validity of the used instruments.

**SECTION 4: CONCLUSION**

FDI Investment in a country by individuals and organizations from other countries is an important aspect of international finance. This flow of international finance may take the form of portfolio investment or direct investment. FDI could bring into the country not only fresh

capital, but also modern technologies and know-how, generating higher economic growth. Besides, an FDI inflow improves country’s credit rating and makes access to future financing source easier (Zakharov, Kuai, 2001). A technologically advances countries can also be benefited from FDI. Hence, foreign capital inflows would be more welfare improving in the long run.

One of the messages emerging from the analysis is that opening the FDI from more advanced countries has important beneficial implication for a developing country. Hence, the study suggests that emerging economies should encourage foreign direct investment from more developed, market-based economies so as to accelerate technology updating economic growth. Also, the countries should not only focus on attracting more foreign direct investment but should look into the policies that will allow maximization of benefits through appropriate composition of the flows.

**Table 1 Arellano-Bond estimates using GMM technique for region wise countries**

Variable	Africa	Asia	Europe	Latin America
<b>Dfdigdp(-1)</b>	-0.4727 (3.28)*	0.4779 (5.60)*	0.1521 (2.01)**	0.2850 (2.48)**
<b>constant</b>	-0.0318 (11.41)*	0.0017 (1.73)***	-0.0019 (2.70)*	-0.0008 (0.21)
<b>Log of GDP</b>	0.0950 (1.08)	0.0159 (1.29)	-0.0172 (0.74)	-0.0840 (0.62)
<b>openness</b>	0.4568 (3.91)*	0.0620 (3.21)*	-0.0891 (0.80)	0.0654 (0.30)
<b>Financial development</b>	-0.0051 (1.36)	-1.24e-05 (5.19)*	0.0017 (4.26)*	0.0001 (0.925)
<b>Exchange rate</b>	0.0330 (5.82)*	-7.01e-07 (0.43)	-0.0001 (1.79)***	-8.6e-06 (1.81)***
<b>inflation</b>	-0.0050 (8.03)*	-4.30e-05 (1.74)***	-0.0003 (2.67)*	-0.0001 (2.34)**
<b>Sargan Test : p- values</b>	0.57	0.58	0.57	0.59
<b>serial correlation test: p- values : AR (1) errors</b>	0.09	0.003	0.001	0.06
<b>AR (2) errors</b>	0.76	0.64	0.49	0.35

\*significant at 1 percent level, \*\* significant at 5 percent level \*\*\*significant at 10 percent level  
 Figures within parenthesis provides the t-value

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