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# THE SIGNIFICANCE OF MACROECONOMIC AND FINANCIAL MARKET VARIABLES FOR FDI INFLOW IN ASIAN DEVELOPING COUNTRIES

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**Abstract**

This paper weighs up the effect of macroeconomic stability and financial development of host country in increasing its attractiveness for investors abroad. The significance of market size, level of development, openness and efficiency of stock market for inward Foreign Direct Investment (FDI) was also investigated. Yearly panel data for 7 countries from 1990 to 2015, covering 26 years were employed. The result shows that Gross Domestic Product (GDP) and Sound macroeconomic discipline proved significant for inward FDI. Furthermore, small percentage of inflation and exchange rate fluctuations and openness of a country were also positively significant. [1]Stock market and [2]financial development of a country except for private credit by bank positively strongly affect inward FDI.

**Keywords:** *FDI, Market Size, Macroeconomic Variables, Financial Development.*

## 1. Introduction to Financial Development

The FDI stock held by developing countries has increased many folds during the last few decades[3]. Since the seventies, many developing economies adopted inside-out approach in attracting foreign funds. Among the developing countries, China was the principle beneficiary of FDI inflows attracting 39% of all FDI flow to the developing world (World Bank, 2004).

These countries adopted outward approach by moving away from country driven and inward focused to unrestricted market-oriented expansion policy (Kobrin 2005). This shift in

[1] Stock market is proxied stock market turnover rate and market capitalization.
[2] Financial development is proxied by local credit to financial sector, domestic credit to private sector, private credit by deposit money banks and private credit by deposit money bank and financial institutions.
[3] FDI into developing countries has risen by 982% from $132.95 billion to 1438.49 billion from 1980-1999 (World Bank, 2003).

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strategy changes put emphasize on drawing FDI investment with the urge that foreign FDI flows to countries would help in strengthening their financial, economic, technological and skills deficits that prevailed in such countries (Balasubramanyam & Sapsord, 2001). Hence, in the decades of the seventies and eighties many developing economies started relaxing their laws, foreign affairs, trade restrictions and regulations that once repressed the flow of FDI to these countries. Now foreign MNCs enjoys more open investment systems as part of their outward-oriented trade reform package (Athukorala & Sharma 2004).

This study specifically examines the role of macroeconomic discipline, trade liberalization, financial development and so on, utilizing yearly data for a panel of 7 nation states over the period of 1990-2015. The findings of the paper support the notion that the market size and its economic growth level have shown strong positive influence on inward FDI followed by other macro variables like inflation, exchange rate, trade, and vibrant financial development have substantial positive effect on attracting Foreign Direct Investment (FDI) from abroad to host countries.

The remaining paper follows the following pattern. The second section discusses the country's location factors with their likely influence on inward FDI. Empirical model and estimation issues are dealt with in the third section while fourth one examines and investigates the observed outcomes and discusses the robustness of the results. The paper concludes with the fifth section.

## 2. LITERATURE REVIEW

Before addressing the main question, I first need a perspective in order to discuss the location characteristics of countries in attracting foreign investors. The literature review enabled me to explore macroeconomic and financial market variables' influence on inward FDI in the host countries.

### 2.1 The Size of the Market

Empirical literature on *FDI* has recognized an important causal relationship of market size with inward *FDI*. Big markets house Domestic as well as foreign firms and help them in achieving economies of scale. The presence of large markets of the host countries benefits foreign Multinational Corporations (MNCs) by offering low cost of factors of production as evident from the study of Shah., (2014). Also, the study of Markusen and Maskus (1999), Love and Lage-Hidalgo (2000), Lipsey (2000) and Moosa (2002) shows that the size of local markets and differences in the cost of factors are related to the location of FDI which implied that large domestic market accommodate foreign investments profitably to both parties. The commerce department of the United States considered that enormous progression in investment came to large developing markets of the world. Likewise, India is ranked the world's fifth largest after China, USA, Japan and Germany. In the third section, GDP is used

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as a measure of proxy for the size of country market and expect a direct positive association between inward *FDI* and the size of the market.

### 2.2 Economic Development / the Level of Income

Gross Domestic Product per Capita (GDPPC) is used as a proxy for the development level of a country to show its possible effect on inward FDI. The income level of a country determines the inward FDI flows to the host country.

The country's level of development is expected to reflect and decide on the kind and pattern of inward FDI (Loungani, Mody & Razin, 2002), and it then causes FDI to become more horizontal as development increases (Markus 1998). High income level of a country signifies the anticipated amount and the kinds of goods traded in the market. In Germany, the most important determinant of inward FDI is its level of income (Kyrkilss & Pantilidies, 2003).

As a proxy for the income level, GDPPC is used for the income level of the host emerging country with the expectation of positive influence on inward *FDI.*

### 2.3 Openness/ Liberalization

The degree of openness of a country is another factor determining the flow of inward FDI to a country. The policy reforms regarding taxation, tariffs, customs duties and trade also changed the direction of inward FDI. In the 1970s and 1980s, developing countries levied limitations, custom duties and tariff hurdles for import substitution and to some degree for technology transfer and other spill-over concerns. The cost considerations resulting from tariff and other restrictions, has prompted FDI to tariff jump in these countries (Balasubramanyam, Salisu & Sapsord, 2001).

Nonetheless, in the 1990s East Asian countries, despite trade and investment liberalization, succeeded in receiving FDI (Balasubramanyam & Sapsord, 2001), induced various other emerging countries relaxing their economic policies (Nunnenkamp 2002). Poland, for example has established increasing trade relations with Western Europe. Similarly, its rapidly relaxing economies and business-friendly policies resulted in significant growth in inward FDI in the early 1990s (Cieslik, 2005). Sub-Saharan countries, after introducing reforms and free market economy programs also experienced an upward swing in inward FDI (Morisset, 2000). Regional trade agreements between countries has enhanced both outward and inward FDI ( Globerman & Shapiro 1999).

Gostanga (1998) and Asiedu (2002) focused that policy reforms undertaken by the developing countries are the contributing factors for FDI inflows. In their view, corporate tax and the extent of liberalization are the major factors in determining FDI. According to Blomstrom, Kokko & Steven (1998), FDI has experienced two dimensional effects as a result of trade agreements between countries: The indirect effect is through trade liberalization while the direct effect is through variations in investment rules associated. According to their opinions, lower international tariffs can expand host country's markets and thus encourage

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FDI, but for tariff jumping FDI, lower external tariffs can ease FDI to the region. The study of Markusen & Venables (1998) and Markusen (2002) found that if different relative factors endowments and costs of trade of countries are low then vertical FDI come into play. But when the differences between factor costs and size among countries are marginal, cost of trade are moderate to high, it trigger more horizontal FDI (Ismail, Smith & Kugler (2009).

In this study, I have used trade as a proxy to represent the openness of a host country with the assumption of positive relationship between FDI inflow and the degree of openness of the host country. Trade used in this study is the total of the transfer of goods plus services to and from the host country measured as a percentage of GDP.

### 2.4 Macroeconomic Stability

Similarly, macroeconomic indicators also had a greater impact on the flow of FDI. In FDI empirical literature, the exchange rate influence on FDI is two-ways. Greater exchange rate fluctuation in a country discourages FDI flows while a stable currency encourages its flow. A series of studies conducted by Capel (1992); Campa (1993) and Rivoli (1996) show a inverse relationship between the volatility of rate of exchange and inward FDI and this deter inward FDI. In contrast, exchange rate and inward FDI are positively associated given lesser exchange rate fluctuation. This relationship is further endorsed by studies conducted by Cushman (1985); Goldberg and Kolstad (1995); Aizenman and Marion (2004) and Broll and Wong (2006). Froot and Stein argued that a cheaper currency of the host country should have a positive effect on inward FDI into the host country and conversely, an increase of the host country's currency should drop FDI into the country.

The importance of exchange rate for FDI is also evident from the study conducted by Kyrkilss and Pantilidies (2003), in which they pointed out that exchange rate is an influential factor in determining the flow of FDI to Singapore and Brazil. Empirical evidence suggests the effect of exchange rate unpredictability and its magnitude which explain that the exchange rate of a country attracts inward FDI given that the expected rate fluctuation is low (Cushman 1985, 1988, Goldberg etal. 1995, De Menil, (1999), as well as Pain & Van Welsum, (2003). Also there exists a negative correlation between the currency conversion rate and inward FDI and this result because of the unpredictable nature of a country's currency, (Campa, 1993, Benassy-Quere, Lionel Fontagne & Lahreche-Rovil, 2001, Urata & Kawai, 2000 and Kiyota & Urata, 2004). However, Gorg & Wakelin (2002) found that exchange rate and inward FDI are not significantly related.

Inflation, another macroeconomic indicator also played a key role in the dislocation of FDI from one country to another. A common view is that inflation is detrimental to the economic prospect of a host country. It is considered a ghost for the economic disorder in the country. In an environment where inflation is staggering, the government will be incapable of balancing the budget in which case the State bank of a country need to step in to restrict the

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supply of money in order to increase the cost of capital which then leads to low inflow of FDI to the country. Similar view is also supported by the study result of Selin, (1999) who argued that inverse relationship existed between the purchasing power of a country's currency and FDI. According to them, higher inflation of host country discouraged FDI to the country.

In this study, the host country's exchange rate and its inflation are used as proxies for the macroeconomic stability of a country.

Having exchange rate and inflation as proxies for the macroeconomic stability of a country, I expect positive relationship between stable economic condition and inward FDI to a country.

### 2.5 Financial Development

Like a stable economic condition, a vibrant financial development of a country also attracts foreign MNCs to invest in the host country. The extent of development of well financial institutions of a host country which acts like a magnet in attracting foreign funds especially foreign direct investment to host country is highly correlated with flow of FDI to the country. Ilhan (2015) found that there was bidirectional causality in the case of Turkey.

Another study conducted by Alfaro, Chanda, Kalemli-Ozkan & Sayek (2004) empirically examined that well developed financial sector in particular of developed economies experienced high growth in their economies than those having less developed financial systems and also experience growth in the share of FDI to their countries provided the condition of market structure and human capital. They argued that credit constraint entrepreneurs find it easier to start their own firms in developed financial markets than when there is under developed financial system. So financial markets link investors from abroad to investors of the host country, and this will then lead FDI spillover effect and the country's economic growth.

Given the higher political stability of a country, financial institutions reaped the benefits of FDI efficiently. Beyond a threshold level, financial development has a negative impact on FDI (Dutta & Roy 2011). According to them, altering this inception level of financial system, one would see the effect of it on FDI.

Empirical research provide evidence that market size, legislative and incentive policies, macroeconomic variables, reliability and efficiency of financial system, law and order situations, government and fiscal environment, and physical infrastructure are critical factors for attracting FDI (Nasir & Hassan 2011).

In this study, proxies used for financial development of a country are the various types of credits extended by lending institutions to private sector. We also used the turnover ratio and the capitalization of stock markets to represent stock market development of a country.

## 3. METHODOLOGY

### 3.1 SAMPLE AND SPECIFICATION OF EMPIRICAL MODEL

The study sample of this research paper where the researcher attempts to explore the macroeconomic and financial market variables' effect on inward FDI incorporates seven

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Asian developing economies: Pakistan, India, Iran, China, Malaysia, Turkey and Indonesia. Using secondary data of annual frequencies, the data covers the time horizon of 26 years extending from 1990 to 2015. Thus the total number of observations for cross-section of seven countries with time period of 26 years turns out to be 26*7=182. The dependent and independent variables were chosen for their ease of data collection and rigorous theoretical foundation. The sources of the data and variables with their proxies are listed in Table No. 1. Based on the discussions on the likely influential factors influencing inward FDI in part two, I came up with the following condense form of equation to estimate the effect of macroeconomic and financial market determinants on inward FDI.

$$FDI_{jt} = f(MarketSize_{jt}, Economic\ Development_{jt}, Opnenness_{jt}, MacroeconomicStability_{jt}, Fin$$

In the above model No. 1, the subscript j symbolizes a developing country that ranges from 1 to 7 while the subscript t represents the time horizon of 26 years from 1990 to 2015.

After carefully substituting proxies for their relevant variables, model No. 1 transforms to the following model No. 2

$$fdi_{jt} = \alpha_0 + Population_{jt} + Gdppc_{jt} + Trade_{jt} + Inflation_{jt} + ExchangeRate_{jt} + +StockMarketTurnoverRation_{jt} + StockMarketCapitalization_{jt} + \frac{DomesticCredit.PrivateSector_{jt} + DomesticCredit\ toFinancialSector_{jt} +}{PrivateCreditbyBanks_{jt} + PrivateCreditbyBanks\&FinancialInstitutions_{jt} + \xi_{jt}} \quad (2)$$

Table No. 2. Which is followed by Table No. 1., summarizes the statistical aspects of each variable.

**Table No. 1 Variables with their proxies and data sources**

| Regresand | Regressors | Proxies utilized | Data Source |
|---|---|---|---|
| FDI | | FDI inflows | IFS, International Monetary Fund |
| | Market Size | GDP | WDI, World Bank Website |
| | Economic Development | GDPPC | WDI, World Bank Website |
| | Trade Openness | Trade as %GDP | IMF Website |

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| | | | |
|---|---|---|---|
| | Macroeconomic Stability | Inflation | IFS, IMF Website |
| | | Exchange Rate | IFS, IMF Website |
| | Stock Market Efficiency | Stock market Turnover Rate | WFE, GSMF & S&P, World Bank Website |
| | | Stock Market Capitalization | WFE, GSMF & S&P, World Bank Website |
| | Financial Development | Private Credit by Banks | IFS, IMF Website |
| | | Private Credit by banks and Financial Institutions | IFS, IMF Website |
| | | Domestic Credit to Private Sector | WDI, World Bank Website |
| | | Domestic Credit by Financial Sector | IFS,IMF Website |

**Table No.2 Descriptive Statistics**

| Name of Variables | Observations | Mean Value | Standard Deviation | Minimum Value | Maximum Value |
|---|---|---|---|---|---|
| lnFDI | 182 | 22.0204 | 2.1118 | 14.5087 | 26.3963 |
| lnGDP | 182 | 26.5242 | 1.2764 | 24.4124 | 30.1355 |
| lnGDPPC | 182 | 7.4605 | .9959 | 5.6978 | 9.3222 |
| lnTrade | 182 | 3.9163 | .5978 | 2.7520 | 5.3955 |
| Inflation | 182 | 13.5054 | 18.4716 | -1.4079 | 106.2627 |
| Exchange Rate | 182 | 2628.8090 | 5655.2620 | .00261 | 33226.3 |
| Private Credit by Bank | 182 | 52.5886 | 39.247 | 12.5401 | 155.2484 |
| Private Credit by Banks & Financial Institutions | 182 | 50.97608 | 37.9481 | 12.2302 | 149.0600 |
| Domestic Credit to Private Sector | 182 | 55.3627 | 40.2677 | 14.5213 | 158.5050 |
| Domestic Credit by Financial Sector | 182 | 71.5795 | 38.5012 | 19.4670 | 194.4101 |

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| | | | | | |
|---|---|---|---|---|---|
| Stock Market Turnover Ratio | 182 | 89.2921 | 86.6548 | .3351 | 467.9498 |
| Stock Market Capitalization | 182 | 47.3885 | 49.8031 | 1.3422 | 265.5638 |

## 3.2 THE ESTIMATION ISSUE AND ECONOMETRIC TECHNIQUES

Before embarking on estimation and its discussion issues, empirical research necessitates certain estimation issues to be dealt with in order to come up with unbiased standard errors.

Therefore, Breush-Pagan / Cook-Weisberg Test for heteroskedasticity was carried out to test for the presence of non-constant variance which while present in data will lead to biased standard errors and ultimately to biased t-statistics. The test confirmed the presence of heteroskedasticity based on the P-Values reported in Table No. 3 for all the models of the study enabling the researcher to eschew the null hypothesis of homoscedastic standard error. The issue of non-constant variance was fixed by carrying out robust regressions for all models which made the data homoscedastic for estimation purpose.

To check for multi collinearity, we conducted correlation coefficient and Variance Inflation Factor (VIF) tests, which confirmed that only three financial market variables like internal loan to private sector, private credit by banks and domestic credit by banks and financial institutions among themselves are highly correlated with Variance Inflation Factor (VIF) reported greater than 10. The correlation and VIF matrices are given in table No. 4 and Appendix 1 respectively. To solve the problem of multicollinearity, the variables instead of being dropped from the data set were treated in isolation in various models of regressions where they no longer suffer from multicollinearity. Hence the models shown in Appendix No. 1, report the mean VIF.

**Table No.3 : Results for( Breush-Pagan) /(Cook-Weisberg ) test for Hetero-scedasticity**

| No | $Model\ Tested$ | P-value |
|---|---|---|
| 0 | $FDI_{jt}$ | 0.0000 |
| 1 | $\alpha_0 + \beta_1 GDP_{jt} + \beta_2 GDPPC_{jt} + \beta_3 Trade_{jt} + \xi_{jt}$ | 0.0000 |
| 2 | $\alpha_0 + \beta_1 GDP_{jt} + \beta_2 GDPPC_{jt} + \beta_3 Trade_{jt} + \beta_4 Inflation_{jt} + \xi_{jt}$ | 0.0000 |
| 3 | $\alpha_0 + \beta_1 GDP_{jt} + \beta_2 GDPPC_{jt} + \beta_3 Trade_{jt} + \beta_4 Inflation_{jt} + \beta_5 ExchRate_{jt} + \xi_{jt}$ | 0.0000 |
| 4 | $\alpha_0 + \beta_1 GDP_{jt} + \beta_2 GDPPC_{jt} + \beta_3 Trade_{jt} + \beta_4 Inflation_{jt} + \beta_5 ExchRate_{jt} + \beta_6 StMktTO_{jt} + \xi_{jt}$ | 0.0000 |

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| | | |
|---|---|---|
| 5 | $\alpha_0 + \beta_1 GDP_{jt} + \beta_2 GDPPC_{jt} + \beta_3 Trade_{jt} + \beta_4 Inflation_{jt} + \beta_5 ExchRate_{jt} + \beta_6 StMktTO_{jt} + \beta_7 StMktCap_{jt} + \xi_{jt}$ | 0.0000 |
| 6 | $\alpha_0 + \beta_1 GDP_{jt} + \beta_2 GDPPC_{jt} + \beta_3 Trade_{jt} + \beta_4 Inflation_{jt} + \beta_5 ExchRate_{jt} + \beta_7 StMktCap_{jt} + \beta_8 DomCrdtFinSec_{jt} + \xi_{jt}$ | 0.0000 |
| 7 | $\alpha_0 + \beta_1 GDP_{jt} + \beta_2 GDPPC_{jt} + \beta_3 Trade_{jt} + \beta_4 Inflation_{jt} + \beta_5 ExchRate_{jt} + \beta_7 StMktCap_{jt} + \beta_8 DomCrdtPrvtSec_{jt} + \xi_{jt}$ | 0.0000 |
| 8 | $\alpha_0 + \beta_1 GDP_{jt} + \beta_2 GDPPC_{jt} + \beta_3 Trade_{jt} + \beta_4 Inflation_{jt} + \beta_5 ExchRate_{jt} + \beta_6 StMktTO_{jt} + \beta_7 StMktCap_{jt} + \beta_8 DomCrdtFinSec_{jt} + \beta_8 PrvtCrdtBnks_{jt} + \xi_{jt}$ | 0.0000 |
| 9 | $\alpha_0 + \beta_1 GDP_{jt} + \beta_2 GDPPC_{jt} + \beta_3 Trade_{jt} + \beta_4 Inflation_{jt} + \beta_5 ExchRate_{jt} + \beta_6 StMktTO_{jt} + \beta_7 StMktCap_{jt} + \beta_7 DomCrdtFS_{jt} + \beta_8 PrvtCrdtBnks_{jt} + \beta_8 PrvtCrdtBnk\&inSec_{jt} + \xi_{jt}$ | 0.0000 |

**Table No.4 Matrix for Correlation**

| Serial No | Name of Variables | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|---|
| 1 | FDI | 1 | | | | | |
| 2 | Market Size | 0.7665 | 1 | | | | |
| 3 | Income Level | 0.0255 | 0.1293 | 1 | | | |
| 4 | Trade | -0.123 | -0.2855 | 0.6000 | 1 | | |
| 5 | Inflation | -0.147 | -0.1522 | 0.4527 | 0.4373 | 1 | |
| 6 | Exchange Rate | -0.024 | 0.0341 | 0.2483 | -0.0246 | -0.0521 | 1 |
| 7 | Stock Market Turnover Ratio | 0.1787 | 0.1402 | 0.1545 | 0.2066 | 0.0446 | -0.3493 |
| 8 | Stock Market Capitalization | 0.0557 | -0.0654 | -0.1290 | -0.1754 | -0.321 | 0.4742 |
| 9 | Private Credit by Banks | 0.4554 | 0.3265 | -0.1896 | -0.2942 | -0.4239 | 0.0790 |
| 10 | Private Credit by Banks and Financial Institutions | 0.4693 | 0.3325 | -0.1713 | -0.1713 | -0.4472 | 0.0462 |
| 11 | Domestic Credit to Private Sector | 0.4307 | 0.2986 | -0.1648 | -0.2892 | -0.4042 | 0.1147 |

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|---|---|---|---|---|---|---|---|
| **12** | **Domestic Credit by Financial Sector** | **0.4693** | **0.3325** | **-0.171** | **-0.296** | **-0.447** | **0.0462** |

| Serial No | | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|
| 7 | Stock Market Turnover Ratio | 1 | | | | | |
| 8 | Stock Market Capitalization | -0.2649 | 1 | | | | |
| 9 | Private Credit by Banks | 0.0235 | 0.5758 | 1 | | | |
| 10 | Private Credit by Banks and Financial Institutions | -0.0469 | 0.2928 | 0.7187 | 1 | | |
| 11 | Domestic Credit to Private Sector | 0.0138 | 0.6015 | 0.9919 | 0.9944 | 1 | |
| 12 | Domestic Credit by Financial Sector | 0.0341 | 0.5772 | 0.9676 | 0.7385 | 0.9669 | 1 |

Finally, to decide on between fixed effect and random effect panel estimation regression models, the Hausman Specification Test (1978) was executed for the regression undertaken with the results reported in Appendix 2. The Hausman Specification test (1978) accepts the hypothesis for some of the models while reject the null hypothesis for others based on the probability values given in appendix 2. Fixed Effect estimation technique is used for model four, five, six, seven and eight as the tests rejected the null hypothesis proving that the results by random and fixed effects methods are not the same. However, in the rest of the models, random effect was used as the Hausman test failed to reject the null hypothesis and concludes that the results of random and fixed estimation method are the same. The panel estimation results of random and fixed effect models are also shown in appendix 3.

## 4. RESULT DISCUSSIONS AND SENSITIVITY ANALYSIS

Using Hausman Specification Test (1978), the results for some models are based on fixed effect estimation techniques while others employ random effect estimation techniques provided in Appendix No. 2. The results for models four, five, six, seven, and eight are based

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on fixed effect estimation panel regression while that of models one, two, three, and nine are based on random effect estimation method of panel regression. Both the techniques for all models is included to enable one to check for sensitivity analysis of the results obtained through the two methods of panel regression, Shah (2017).

Based on both the random and fixed effect estimation panel regressions, it is evident from all the models that the coefficients for the GDP which is a proxy representing the market size of a country is significant at one percent in all models with strong coefficients results showing that inward FDI is very responsive to large markets. This confirms the hypothesis large world's economies attracted inward FDI.

Gross domestic product per capita (GDPPC) is used as a proxy for the development level of a country. The whole array of results for all models shows that GDPPC is significant at one percent significance level rejecting the null hypothesis of no relationship between GDPPC and inward FDI with strong results that FDI seeks to enter into markets with higher income level and this notion is supported by all the models of panel regression. This confirms the hypothesis that FDI is responsive to markets of the world having higher GDPPC.

The level of trade which is a proxy for openness of a country represents the extent to which a country is liberalized. It is evident from all the models especially model one and nine that the results are strongly positively significant at one percent significance level again suggesting that the flow of FDI into a country is strongly contingent upon the extent to which a country is open and liberalized. So the more liberalized a country is, the more will be the foreign investments attracted into the country because trade barriers no longer impede the flow of FDI into that country. The results are equally supported by the fixed effect and random effect estimation panel regressions at one percent significance with strong coefficients for all models.

The whole progressive effect of trade liberalization reveals that market reforms and opening economies indicates a general decline in governmental barriers which then improves the host country's business climate, and carrying the green signal to multinational investors to invest in these economies which then increases the flow of *FDI* to the host country. The results, therefore, corroborate the hypothesis that liberalized and open economies are attractive to inward FDI.

Inflation and the rate of currency exchange are the factors representing macroeconomic stability of a country are also taken into account. It is argued that an increase in inflation or in other words an increase in consumer prices discourages inward *FDI*. When the purchasing power of a dollar decreases, investors abroad are discouraged to invest in the host country where the rate of inflation is high. This implies that a well-functioning macroeconomic environment and the host country's ability to control for inflation encourage

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foreign investment flow. Using direct quotation equation, that is, 1 US$ = the numbers of host country' currencies' units, as conversion rate gives a negative coefficients FDI literature. It indicates that the home country's currency depreciation encourages a decrease in the cost of local production in terms of overseas currency which leads to encourage more investment inflows to host country. The results obtained for a country's currency exchange rate against US dollar and its inflation are in contradiction with the null hypothesis which states that they are negatively associated but the obtained coefficients are weakly and positively associated with inwards FDI. This, though contradict their negative connectivity with FDI, can be explained that a general steady and small increase in prices would not deter inward FDI, given that inward FDI has to seek other country's characteristics such as sound macroeconomic, openness and vibrant financial systems.

Thus small changes in currency exchanges and consumer prices do not necessarily deter inward FDI. The very weak coefficient results obtained for inflation and exchange rates empirically prove that they are positively associated with inward FDI and do not deter inward FDI. Instead, inward FDI enter into stable markets where the rate of inflation and the volatility of exchange rates are within limits, while too much volatility in exchange rate and galloping inflation can impede inward FDI, thus leading the researcher to conclude that pocket-sized fluctuation of exchange rate and a steady and well-handled inflation do not obstruct inward FDI.

The stock market efficiency is proxied by stock market turnover ratio and the stock market capitalization treated in models four and five acting as foundation models for these variables. The stock market turnover ratio is significant at 5% level in model nine while the stock market capitalization is significant in all the models indicating that efficient stock markets greatly influence the interest of foreign investors to direct their investment into the host country. The array of coefficients for stock market capitalization is positively significant in all the regression results. Thus a well-functioning financial market of host country is a green signal to foreign investors and this confirms the rejection of null hypothesis, leading the researcher to accept the alternate one.

The financial market is proxied by the country's internal credit to private and financial sectors, private loan advances by lending institutions and other financial institutions. All these proxies for the financial development of a country are positively significant except for the Private Credit by Banks. The results are given in table No.1. This supports the argument that the ease of local credit availability in a host country strongly encourages investor from abroad.

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In summary, the results of the research indicate that FDI is a function of market size, bilateral trade agreements, and unwavering macroeconomic environment. The study showed that well-functioning stock markets and vibrant financial sector also affect FDI from abroad.

## 5. CONCLUSION

This study has explored the macroeconomic, stock market and financial market variables' effect on inward FDI in China, India, Indonesia, Iran, Malaysia, Pakistan and Turkey. Using yearly data of the economies of these countries covering time period from 1990 to 2015, the study found that market size, openness of a country, its stock markets and financial development have significant positive effect on FDI inflows. The results also substantiate that inward FDI is also responsive to country's development level proved significant in their models. Between FDI and inflation and exchange rate of a country's currency, there exists a positive linkage.

The study result portrayed that FDI does not enter into small and financially underdeveloped markets and where there are galloping inflation and high exchange rate volatility. Hence, stable macroeconomic and a vibrant financial sector are strong determinants of FDI inflows to the countries.

In light of the study findings, the countries of this study must focus on the following policy reforms to attract more FDI i.e. liberalized markets, stable macroeconomic environment, and developed and sound stock market and financial sector of a country.

The study will certainly help policy makers of the countries in making policies appropriate for encouraging foreign investors. However, the findings of the paper are in line and limited to the countries of the current study. So, macro and socioeconomic modifications shall be made before any generalization.

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## Appendix 1,

**Table5: Results of the Variance Inflation Factor Tests of Multi collinearity**

| No | $\boldsymbol{Models\ Tested}$ | VIF |
|---|---|---|
| 1 | $\alpha_0 + \beta_1 GDP_{jt} + \beta_2 GDPPC_{jt} + \beta_3 Trade_{jt} + \xi_{jt}$ | 1.70 |
| 2 | $\alpha_0 + \beta_1 GDP_{jt} + \beta_2 GDPPC_{jt} + \beta_3 Trade_{jt} + \beta_4 Inflation_{jt} + \xi_{jt}$ | 1.68 |
| 3 | $\alpha_0 + \beta_1 GDP_{jt} + \beta_2 GDPPC_{jt} + \beta_3 Trade_{jt} + \beta_4 Inflation_{jt} + \beta_5 ExchRate_{jt} + \xi_{jt}$ | 1.68 |
| 4 | $\alpha_0 + \beta_1 GDP_{jt} + \beta_2 GDPPC_{jt} + \beta_3 Trade_{jt} + \beta_4 Inflation_{jt} + \beta_5 ExchRate_{jt} + \beta_6 StMktTR_{jt} + \xi_{jt}$ | 1.67 |

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| | | |
|---|---|---|
| 5 | $\alpha_0 + \beta_1 GDP_{jt} + \beta_2 GDPPC_{jt} + \beta_3 Trade_{jt} + \beta_4 Inflation_{jt} + \beta_5 ExchRate_{jt} + \beta_6 StMktTR_{jt} + \beta_7 StMktCap_{jt} + \xi_{jt}$ | **1.72** |
| 6 | $\alpha_0 + \beta_1 GDP_{jt} + \beta_2 GDPPC_{jt} + \beta_3 Trade_{jt} + \beta_4 Inflation_{jt} + \beta_5 ExchRate_{jt} + \beta_7 SMCap_{jt} + \beta_8 DCFS_{jt} + \xi_{jt}$ | **2.09** |
| 7 | $\alpha_0 + \beta_1 GDP_{jt} + \beta_2 GDPPC_{jt} + \beta_3 Trade_{jt} + \beta_4 Inflation_{jt} + \beta_5 ExchRate_{jt} + \beta_7 SMCap_{jt} + \beta_8 DCPS_{jt} + \xi_{jt}$ | **2.01** |
| 8 | $\alpha_0 + \beta_1 GDP_{jt} + \beta_2 GDPPC_{jt} + \beta_3 Trade_{jt} + \beta_4 Inflation_{jt} + \beta_5 ExchRate_{jt} + \beta_6 SMCap_{jt} + \beta_7 PCB_{jt} + \xi_{jt}$ | **2.02** |
| 9 | $\alpha_0 + \beta_1 GDP_{jt} + \beta_2 GDPPC_{jt} + \beta_3 Trade_{jt} + \beta_4 Inflation_{jt} + \beta_5 ExchRate_{jt} + \beta_6 SMTR_{jt} + \beta_7 PCB_{jt} + \beta_8 PCBFI_{jt} + \xi_{jt}$ | **1.98** |
| ***The Varianc Inflation Factor Values reported are the mean VIF values of the model tested*** | | |

**Appendix 2:Results for Hausman Specification Test**

| No | ***Models Tested*** | P-Value |
|---|---|---|
| **1** | $\alpha_0 + \beta_1 GDP_{jt} + \beta_2 GDPPC_{jt} + \beta_3 Trade_{jt} + \xi_{jt}$ | **0.6596** |
| **2** | $\alpha_0 + \beta_1 GDP_{jt} + \beta_2 GDPPC_{jt} + \beta_3 Trade_{jt} + \beta_4 Inflation_{jt} + \xi_{jt}$ | **0.7551** |

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| | | |
|---|---|---|
| 3 | $\alpha_0 + \beta_1 GDP_{jt} + \beta_2 GDPPC_{jt} + \beta_3 Trade_{jt} + \beta_4 Inflation_{jt} + \beta_5 ExchRate_{jt} + \xi_{jt}$ | 0.9589 |
| 4 | $\alpha_0 + \beta_1 GDP_{jt} + \beta_2 GDPPC_{jt} + \beta_3 Trade_{jt} + \beta_4 Inflation_{jt} + \beta_5 ExchRate_{jt} + \beta_6 StMktTR_{jt} + \xi_{jt}$ | 0.0000 |
| 5 | $\alpha_0 + \beta_1 GDP_{jt} + \beta_2 GDPPC_{jt} + \beta_3 Trade_{jt} + \beta_4 Inflation_{jt} + \beta_5 ExchRate_{jt} + \beta_6 StMktTR_{jt} + \beta_7 StMktCap_{jt} + \xi_{jt}$ | 0.0000 |
| 6 | $\alpha_0 + \beta_1 GDP_{jt} + \beta_2 GDPPC_{jt} + \beta_3 Trade_{jt} + \beta_4 Inflation_{jt} + \beta_5 ExchRate_{jt} + \beta_7 SMCap_{jt} + \beta_8 DCFS_{jt} + \xi_{jt}$ | 0.0000 |
| 7 | $\alpha_0 + \beta_1 GDP_{jt} + \beta_2 GDPPC_{jt} + \beta_3 Trade_{jt} + \beta_4 Inflation_{jt} + \beta_5 ExchRate_{jt} + \beta_7 SMCap_{jt} + \beta_8 DCPS_{jt} + \xi_{jt}$ | 0.0000 |
| 8 | $\alpha_0 + \beta_1 GDP_{jt} + \beta_2 GDPPC_{jt} + \beta_3 Trade_{jt} + \beta_4 Inflation_{jt} + \beta_5 ExchRate_{jt} + \beta_6 SMCap_{jt} + \beta_7 PCB_{jt} + \xi_{jt}$ | 0.0000 |
| 9 | $\alpha_0 + \beta_1 GDP_{jt} + \beta_2 GDPPC_{jt} + \beta_3 Trade_{jt} + \beta_4 Inflation_{jt} + \beta_5 ExchRate_{jt} + \beta_6 SMTR_{jt} + \beta_7 PCB_{jt} + \beta_8 PCBFI_{jt} + \xi_{jt}$ | .01165 |

**Appendix 3: Random versus fixed effect model estimation results**

| Estimation methods/variable | Proxy | *Random Effect* | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Market Size | Pop | 1.45e-09* (2.25e-10) | 1.29e-09* (2.41e-10) | 1.17e-9* (2.42e-10) | 1.09e-09* 2.46e-10 | 8.97e-10* (2.48e-10) | 4.59e-10 3.29e-10 | -1.31e-10 3.10e-10 | -2.02e-10 3.28e-10 | -2.48e-12 3.18e-10 |

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| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Economic Development | GDPPC | -1.80e-09 (4.99e-09) | -2.30e-09 (4.97e-09) | 2.04e08 🕮 (1.02e-08) | 2.01e-08🕮 1.01e-08 | 2.01e-08🕮 (9.91e-09) | 1.52e-08 1.01e-08 | 4.38e-09 9.80e-09 | 3.59e-09 9.95e-09 | 5.92e-09 1.00e-08 |
| Openness | Trade %GDP | .0236* (.0022) | .0221* (.0023) | .0214* (.0023) | .0226* (.0227) | .0124* (.0040) | .0051 .0054 | -.006 (.0053) | -.0057 (.0054) | -.0044 .0056 |
| Macroeconomic development /stability | Inflation | | -.0112 🕮 (.0061) | -.0129🕮 (.0061) | -.0131 🕮 (.0061) | -.0104 φ (.0060) | -.0072 .0061 | -.0052 (.0057) | -.0045 (.0058) | -.0051 .0058 |
| | Exchange Rate | | | -.0001🕮 (.0004) | -.0001 🕮 (.0000) | -.0001 🕮 (.0001) | -.0001 φ (.0001) | -.0001 (.0001) | -.0001 (.0001) | -.0001 .0000 |
| Stock Market Efficiency | Stock Mkt TR | | | | .0027 🕮 (.0013) | .0029 🕮 (.0013) | .0024 φ (.0013) | .0015 (.0012) | .0017 (.0012) | .0019 .0013 |
| | Stock Mkt Cap | | | | | .0118* (.0038) | .0129* (.0038) | .0143* (.0036) | .0148* (.0037) | .0147 .0037 |
| Financial Development | Dom Crdt by Fin. Sect | | | | | | .0103 🕮 (.0051) | | | .0222 .0052 |
| | Dom Crdt by prvt Sect | | | | | | | .0234* (.0047) | | |
| | Prvt.Crdt by Banks | | | | | | | | .0237* (.0050) | |
| | Prvt.Crdt by bank + Fin Ins. | | | | | | | | | .0222 .0052 |
| R-Square | | 41.57 % | 42.57 % | 44.65% | 45.92 % | 48.70 | 49.87 % | 55.21 % | 54.71 % | 53.56 % |
| No of observations | | 182 | 182 | 182 | 182 | 182 | 182 | 182 | 182 | 182 |

**Standard errors are reported in parenthesis under the coefficients estimates. * represents significance at 1%, 🕮 at 5%, and φ at 10%.**

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| Estimation methods/variables | Proxy used | *Fixed Effect* | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Market Size | Population | 1.44e-09* (2.30e-10) | 1.27e-09* 2.44e-10 | 1.16e-09* 2.46e-10 | 1.04e-09* (2.39e-10) | 9.21e-10* 2.44e-10 | 3.18e-10 (3.34e-10) | -1.46e-10 (3.15e-10) | -2.89e-10 (3.35e-10) | -1.11e-10 (3.26e-10) |
| Economic Development | GDPPC | -3.04e-09 (5.44e-09) | -2.66e-09 5.39e-09 | 1.77e-08 1.09e-08 | 1.32e-08 (1.05e-08) | 1.52e-08 1.05e-08 | 1.14e-08 (1.04e-08) | 4.26e-09 (9.99e-09) | 3.84e-09 (1.03e-08) | 5.96e-09 (1.04e-08) |
| Openness | Trade %GDP | .0236* (.0023) | .0220* (.0024) | .0213142* .0023742 | .0243* (.0024) | .0174* (.0043) | .0062 (.0061) | -.0040 (.0060) | -.0079 (.0058) | -.0077 (.0060) |
| Macroeconomic development /stability | Inflation | | -.0131 🕮 (.0065) | -.0145341 .0064919 | -.0171* (.0063) | -.0154 🕮 (.0063) | -.0112 (.0064) | -.0087 (.0060) | -.0055 (.0061) | -.0058 (.0062) |
| | Exchange Rate | | | -.0001091 .0000506 | -.0001 🕮 (.0001) | -.0001 (.0001) | -.0000 (.0000) | -.0000 (.0001) | -.0001 (.0001) | -.0001 (.0001) |
| Stock Market Efficiency | Stock.Mkt.TR | | | | .0054* (.0014) | .0054* (.0014) | .0046* (.0014) | .0032 🕮 (.0014) | | |
| | St.Mkt.Cap | | | | | .0079 🕮 (.0042) | .01051 🕮 (.0042) | .0125* (.0040) | .0134* (.0041) | .0135* (.0042) |
| Financial Development | Dom,Crdt by Fin. Sect | | | | | | .0143 🕮 (.0055) | | | |
| | Dom. Crdt by prvt Sect | | | | | | | .0242* (.0049) | | |

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| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Prvt.Crdt.by Banks | | | | | | | | .0276* (.0050) | |
| | Prvt.Crdt.by bank + Fin Ins. | | | | | | | | | .0275* (.0054) |
| R-Square | | 41.54 % | 42.53 % | 44.57% | 44.57 % | 47.10 % | 48.31 % | 54.39 % | 53.96 % | 52.57 |
| No of observations | | 182 | 182 | 182 | 182 | 182 | 182 | 182 | 182 | 182 |
| **Standard errors are reported in parenthesis under the coefficients estimates. * represents significance at 1%, 🕮 at 5%, and φ at 10%.** | | | | | | | | | | |