

## Assessing Factors Affecting FDI in Developing Asian Countries

Parul Gupta  
(Masters of economics)

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### ABSTRACT

*The paper focuses on various factors that affect inflow of Foreign Direct Investment in developing countries. The study majorly deals with Asian countries namely India, China, Myanmar, Nepal, Pakistan, Bangladesh and Bhutan that are progressing from being aid dependent to trading giants. The factors affecting FDI are majorly categorised into dependent and independent variables. Here, in this study, the dependent variable considered is FDI inflow and independent variables are market size, value of currency, export, import, gross fixed capital formation, GDP deflator, cost of borrowing and economic reforms. Pooled Ordinary Least Square (OLS), fixed effect and random effect regression analysis is done to ascertain the best regression model and various tests are performed to check the intensity of effect caused by each independent variable on our dependent variable.*

**Index terms:** Foreign Direct Investment (FDI), Gross Domestic Product (GDP), Ordinary Least Square (OLS), Gross Fixed Capital Formation (GFCF).

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### I. INTRODUCTION

World Bank has succinctly defined FDI as “the net inflows (or outflows) of investment to acquire a lasting management interest in an enterprise operating in an economy other than that of the investor. It is the sum of equity capital, reinvestment of earnings and other long term as well as short term capital as mentioned in balance of payments.”

FDI gained attention in international economy after World War II. Numerous studies have been laid so far for enhanced understanding of economic mechanism and behaviour of economic agents at both micro and macro level. FDIs are promoted by relatively open economies that are ready to welcome not just capital investment but technology and management also as FDI's are categorised by ownership control of business enterprise.

According to The Financial Times “Control of management, technology and other crucial inputs can confer de facto control”.

United Nations Conference on Trade and Development (UNCTAD) said “South Asia recorded a 10% increase in FDI to \$60 billion. The growth was driven by India, with a 16% increase in inflows to an estimated \$40 billion registering itself among top ten recipients of overseas investment. The majority went into services industries, including information technology.” “Among developing economies, the Asia- Pacific region received the largest share of global FDI inflows attracting 45% in 2018. Developing countries in the region attracted 40% of global FDI inflows which converted into 88% of total Asia- Pacific region inflows. Over the past decade, the share of intra- region greenfield inflows increased from 40% to 45%. East and North- East Asia accounted for 66% of all intra- regional greenfield FDI outflows.”

The factors affecting FDI differs with both longitudinal and latitudinal changes. As conditions across countries differ, ways in which they attract FDI also changes depending on the initial economic development, regulatory terms and conditions and quality of its working institutions. The aim of the study, hence is to determine factors affecting FDI inflow in developing Asian countries with varied objectives.

The objectives are as follows:

- To examine factors affecting FDI infow.
- To study the impact of reforms on FDI inflow.
- To figure out the best regression technique for the purpose of study and provide relevant suggestions focusing on promotion of FDI inflows in these countries.

The study comprises of Section 1 Introduction, Section 2 Literature Review, Section 3 Data, Methodology and Analysis and Section 4 that includes Conclusion with further scope of the study.

## **II. LITERATURE REVIEW**

There exist various theories and studies that try to explain FDI inflow in any country along with its trends and impact on economy.

Hymer (1960) highlighted the issues related to barriers to entry like uncertainty, risk nationalism of host country, legal system and protectionist outlook of nation for firm which is keen to set up production abroad and Dunning (1997) introduced the world with the concept of 'eclectic paradigm' also known as ownership, location, industrialisation model which companies follow to ascertain whether pursuing FDI is beneficial or not.

Quazi (2004) [6] investigated the factors that drive FDI into countries of South Asian continent namely India, Pakistan, Nepal, Bangladesh and Sri Lanka where factors could be economic or non-economic. Quazi used economic freedom as one of the variables affecting FDI inflow which acts as a substitute for domestic investment climate. The panel regression equation estimation along with generalised least square method with corrections for heteroskedasticity and autocorrelation found that political instability reduced inflows of FDI in a country whereas all other factors like economic prosperity, economic freedom, economic openness, human capital and lagged changes in FDI meaningfully increased FDI inflows.

Adhikary and Mengistu (2008) [9] provided a clear view that higher production standard of FDI holds simply when the host country exhibits a minimum quantity of human capital and adequate infrastructure along with macroeconomic stability, market size and extent of openness alongside exchange rate stability, lower production costs and investment incentives.

Athukorala (2009) [10] mentioned in his work that "determinants affecting FDI inflows are diverse and there is no complete list of FDI determinants though it is usually observed that the most popular determinants are market size, potential growth of market, openness of trade, exchange rate volatility, clustering effects of firms, political stability, institution, taxes, trade restriction, trade effects, productivity, labour cost and infrastructure."

Mottaleb and Kalirajanb (2010/13) [8] mentioned that by tying together the gaps of native savings and investment and carrying the newest technology and management expertise from developing countries FDI can perform vital role in reaching rapid economic growth. The results from analysis of 68 countries for years 2005, 2006 and 2007 for over 8 variables were taken to infer variables critically affecting inflows of FDI in specific countries. The paper noted that small nations across the globe that are emergent can attract ample amount of FDI just by embracing more outward focusing trade policy and by proposing more business welcoming environment in front of foreign investors.

Jha, Agarwal, Gupta and Mishra (2012) [5] analysed Bangladesh, Pakistan, India, Sri Lanka, Nepal and Maldives with parameters GDP, direct investment, trade openness, real effective exchange rate and labour taken into consideration for years 1990 – 2010. The main tools of econometric analysis were Augmented Dickey Fuller test, Durbin Watson test and White test. The results were empirically defensible with the administrative and economic developments over 20 years. Adverse influence of labour on FDI was illuminated in the study.

Parashar (2015) [3] investigated factors affecting FDI inflow in China and India over a stretch of 30 years from 1980 – 2013 using data on market size, infrastructure, trade openness, growth rate, policy changes, inflation and opportunity cost to investors collected from UNCTAD, World Bank, IMF, ILO database and Federal Reserve. Apart from linear regression Dickey Fuller unit root test and Engel Granger co-integration test was performed to ascertain that market size and wage rate are the most important factors that determine flow of FDI and these are consistent with market seeking and resource seeking hypothesis.

Huq, Khan and Rehman (2016) [4] stressed more on Bangladesh while covering 4 other countries India, Nepal, Pakistan and Sri Lanka. They suggested that FDI is considered as one of the vital requirements for overall development course of developing countries. Key concept of transmission mechanism was highlighted and FDI was thought as a contributor of economic development. FDI was thus seen as a reducer of poverty through preliminary macroeconomic stimulus and raiser of total factor productivity and efficiency of resource use in recipient economy through transmission mechanism which works between FDI and poverty reduction.

Intiaz and Bashir (2017) [1] recognised FDI as one of the key sources of funding long term maintainable economic advancement in developing countries. Conceptualisation of economic freedom as a provider of better investment climate important for foreign firms and MNC's was done in which freedom referred to no constraint, burden or obligation in choice or exchange or transfer of personal assets. Panel data fixed and random effect model were used along with Hausman specification test was done to analyse heterogeneity. Further, correlation analysis was conducted to identify strength of linear association among the variables.

Rasheed (2019) [7] studied 14 Asian countries from 2003-2017 to analyse relationship between FDI and macroeconomic factors using panel data technique. The study concluded that macroeconomic indicators significantly affect the FDI inflows in China, Hong Kong, Indonesia, Jordan, Pakistan, Philippines and Vietnam and revealed that trade openness along with exchange rate is decisive economic indicator to attract FDI towards the economies.

### III. DATA, METHODOLOGY AND ANALYSIS

The data for conducting study is collected from various datasets published by World Bank for a period of 39 years. Data can be viewed as unbalanced panel data for the purpose of study where an unbalanced panel is defined as: a dataset in which at least one panel member is not observed every period, therefore, with N panel members and T periods strict inequality holds for the number of observations n in the dataset:  $n < N * T$ .

Table 1: Country wise sample size

S.No	Country Name	Period	No. of years
1	India	1982- 2020	39
2	China	1982- 2020	39
3	Myanmar	1982- 2020	39
4	Nepal	1982- 2011	26
5	Pakistan	2004- 2020	17
6	Bangladesh	1982- 2020	39
7	Bhutan	2006- 2020	17
<b>Total</b>			216

Data for years 1992- 1995 is missing for Nepal due to unavailability of appropriate data.

#### ABOUT THE COUNTRIES

**INDIA:** A developing economy, 3<sup>rd</sup> largest by Purchasing Power Parity (PPP), 5<sup>th</sup> on world economy chart and ranked 142<sup>nd</sup> on basis of nominal GDP and per capita income basis respectively. India attracted a total of \$58.37 billion during April to November 2020 which accords for highest FDI inflow in a span of 8 month in single financial year and showed a 22% hike as compared to first eight month of financial year 2019-20. Socialist cum politicians or politicians inspired by socialists has been the driving force of economic development since independence including sector's state ownership. With introduction of fundamental reforms and there renewals from 1991 onwards India progressed to become a free market economy.

IMF says that India can touch a level of 10% if reforms are rightly pushed and with states taking utmost responsibility over the respective economies.

**CHINA:** Economy market a transition from centrally planned to market orientation. Apart from being 2<sup>nd</sup> leading economy in terms of GDP and largest by PPP China is one off the world's most recklessly growing economies with 6% growth rate over past 30 years. Being on 4<sup>th</sup> and 11<sup>th</sup> position in terms of inward and outward FDI respectively China tops the chart of leading developing economies. High growth base lies under resource intensive exports and manufacturing and availability of labour at low cost. Reduction in economic, environmental and social imbalance has shifted structure from low to high end services and manufacturing and a shift to consumption from investment.

**MYANMAR:** A lower- middle income country with US \$1,210 as its GNI per capita, an agriculture based economy with least development, having maximum population involved in agricultural pursuits directly. Here FDI started in 1973 and in 1988 military coup encouraged indigenous and private enterprise. The moderate growth is driven by strong performance by telecom industry and domestic trade along with relatively slow growth of construction, manufacturing and transport sector.

**NEPAL:** Economic development in the country became more complicated due to political scenarios and rising corruption. Till 1951 people of Nepal faced deprivation of even the basic amenities, gradually in late 1950s the country made progressive walk towards sustainable growth. By 1983 Nepal engaged itself in investment protection agreement with various counties. Opening the country towards economic liberalization with perspective of economic growth and improved standard of living was a major step taken by government of Nepal. Capacity in hydroelectricity played an important role in driving the economy. To promote FDI in the county government entered into double taxation agreements so as to avoid them with least of 10 countries starting from 2000.

**PAKISTAN:** It is a semi-industrialised economy centralised along Indus River and exports being primarily based on commodities like leather goods, sports goods, textiles, chemicals, medical instruments and rugs. Removal of barriers to encourage free flow of capital and FDI was done to the extent of 100% equity participation in many sectors, unlimited payment of profits, service fees, dividends and capital was done. Though doing business was getting easier but problem due to corruption, political instability and domestic insurgence worsened the conditions.

**BANGLADESH:** Economy with 39<sup>th</sup> position in nominal terms and 29<sup>th</sup> in PPP, it is strategically important as a provider of maritime access for landlocked regions mainly Bhutan, Nepal, India and potential gateway for China's landlocked regions. It is a house for major real estate investments. It saw expansion in education system and food production along with development of technological and industrial base and also rose out of poverty.

With commencement of mid 1990s commitment towards free market was observed by successive governments, privatisation of enterprise owned by state, channelization of investment and various banking reforms were seen. BHUTAN: One of the major's least developed and smallest economies, where agriculture and forestry plays the most important role in fetching livelihood to around 60% of the population. The major contributor of overall growth rate here is exports of hydropower to its major market India supported by fiscal policies and monetary policies facilitating macroeconomic stability, characterised by lower rate of inflation, consistently steady exchange rate and accumulation of international reserves. Tremendous progress by reduction in extreme poverty, gender equality promotion and attention towards inequality issues adds to progress of the country. The philosophy of the country guides its development as given by Gross National Happiness (GNH). Hydropower development's ideal condition i.e. abundance of water resources spurred growth and revenue generated from it helps in financing large number of investments for development of human capital in the country.

#### ABOUT THE VARIABLES

The secondary data is collected for the purpose of study. To ascertain how changes in independent variables affect dependent variables, various variables are studied.

Dependent variable: The variable that is tested and experimentally measured is known as dependent variable. Here, Inflow of Foreign Direct Investment is dependent variable. These investments serve interests of various investors putting their money in company or businesses in some distinct nations.

Independent variables: These are the variables that can be controlled and changed to test the impact on dependent variable.

1. Gross Domestic Product (GDP) is an indicator for depicting market size which provides us with some understanding in accordance with endogenous growth theory stating that nation with large market size nurture faster seeking benefits from economies of scale. Higher GDP or GDP growth rate attracts more FDI than the ones that are having a slow or stagnant growth rate.

2. Exports of goods, services and primary income are an important component of international trade that offer wider market to people and firms. Exporting to foreign markets generally decreases unit cost of production, results in increased experience and knowledge which may even facilitate discovery of new marketing practices, technologies and insights.

3. Imports of goods, services and primary income are another component of international trade. When countries are unable to produce cheaply and efficiently they import goods from other countries. Apart from finished product, raw materials that are unavailable in domestic countries are imported.

4. Gross Fixed Capital Formation (GFCF) also referred as net investment, measures net increase in fixed capital namely infrastructure by increased construction of railways, commercial buildings, residential dwellings, roads and improvement of land. Building of capital intensive assets requires huge amount of sunk cost which gets recovered by inflow of FDI in heavy amount.

5. Inflation rate is a quantitative measure at which average price level of goods and services increase over a stretch of time. It indicates a decrease in PPP of nation's currency. An ideal level of inflation is needed to encourage spending instead of savings and thereby leading to nurturing of economic growth.

6. Interest rate of any country plays dynamic role in attracting inflows. It is paid when borrowings are made and received when certain amount is saved. Fall in interest rate of an economy attracts more and more of investors from foreign base as they receive higher returns from the investment made.

7. Exchange rate accounts an inverse relation with FDI. Though most studies show a significant relationship between both, there are many studies that contradict it. The ambiguous result is an outcome of currency of home country which leads to appreciation or depreciation of currency of recipient country and its exchange rate.

8. Reforms played vital role in determining inflows of FDI. It facilitated liberalisation of FDI by waiving off restrictive conditions and obligations. The economic reforms of 1991 played a significant role in economies of Asia. With clear purpose of rapid industrialisation elimination of industrial licensing, permission for foreign investment, encouragement to private and public sectors was done by government. The main aspects of the reforms are Liberalisation, Privatisation and Globalisation.

The unit of measurement of all the variables used can be seen as under. In regression analysis names are used according to the variable (not name of factor).

Table 2: Measurement units of the variables

S.no	Name of Factor	Variable	Measuring unit
1	FDI Inflow	FDI	Current million USD
2	Market size	GDP	Current million USD
3	Value of currency	Exchange rate	LCU per USD
4	Trade	Exports	Current million USD
5	Trade	Imports	Current million USD

6	Infrastructure	GFCF	% of GDP
7	Inflation	GDP deflator	Percentage
8	Cost of borrowing	Interest rate	Percentage
9	Economic reforms	Reforms	

(Log of GDP and exchange rate is used for better results that are more efficient and reliable.)

(Economic reforms can take value 0 and 1 since introduced as dummy variable.)

#### ECONOMIC AND ECONOMETRIC MODELS

Economic model suggests, inflows of FDI are a function of economic factors and can be written as:  $FDI = f$  (Economic factors).

Econometric model suggests, inflows of FDI is dependent variable whereas GDP, exports, imports, gross fixed capital formation, interest rate, GDP deflator, exchange rate and reforms are independent variables or explanatory variables.

The following two models are studied for the purpose of study:

Model 1

$$FDI = \beta_0 + \beta_1(GDP) + \beta_2(\text{exchange rate}) + \beta_3(\text{exports}) + \beta_4(\text{imports}) + \beta_5(\text{GFCF}) + \beta_6(\text{interest rate}) + \beta_7(\text{inflation}) + \mu$$

Model 2

$$FDI = \beta_0 + \beta_1(GDP) + \beta_2(\text{exchange rate}) + \beta_3(\text{exports}) + \beta_4(\text{imports}) + \beta_5(\text{GFCF}) + \beta_6(\text{interest rate}) + \beta_7(\text{inflation}) + \beta_8(\text{reforms}) + \mu$$

#### IV. METHODOLOGY

Panel data is a combination of both time series and cross sectional data. In this behaviour is observed of entities across time. There are 2 major benefits of using panel data.

- Using panel data assures more reliable estimates of the parameters as it allows controlling those unobservable factors which may vary across units but not time or may vary across time but not units.
- Second benefit relies on the fact that identification and effects' measurement is possible in panel data. This is facilitated by usage of different methods of analysis. These are random effect regression model and fixed effect regression model.

Basic panel data analysis is POOLED OLS estimation which is the easiest and simplest estimation method which allows pooling of observations over time and running OLS. In this every observation is treated as separate entity.

FIXED – EFFECT model is used for the analysis of impact of variables that change overtime. It explores the relationship between variables in an entity. FE removes the effects created by time invariant characteristics of variables so as to create an access to net effects on outcome variable by predictors.

RANDOM – EFFECT model relies on the rationale that variations across entities are assumed to be uncorrelated and random. Advantage of using RE is that the variables that are time invariant can be included and these effects are not absorbed by intercept as in case of FE. This model assumes error terms being uncorrelated with predictors allowing time invariant variables' role as explanatory variable. It allows for generalisation of inferences further than sample used.

The first thing to look at is descriptive analysis of the variables. Table below represents the basic statistics of all the variables.

**Table 3: Descriptive Statistics of variables**

Variable	Mean	SD	Min	Max
<b>FDI</b>	19500	54000	-16.6	291000
<b>GDP</b>	25.06	2.42	20.58	30.24
<b>Exchange rate</b>	3.26	1.27	0.63	7.26
<b>Exports</b>	192000	542000	215	2890000
<b>Imports</b>	188000	497000	406	2830000
<b>Gross FCF</b>	26.12	11.22	9.48	68.02
<b>Inflation</b>	8.63	7.70	-1.26	57.68
<b>Interest rate</b>	3.19	6.30	-31.50	14.82
<b>Reform</b>	0.75	0.43	0	1

(FDI, exports and imports are in 100 thousand million dollar. Also SD stands for standard deviation and min and max refers to minimum and maximum value respectively.)

Each variable included consists of 216 observations for panel of 7 developing Asian countries. Next, FISHER TYPE UNIT ROOT TEST, developed by Maddala and Wu (1999) is used for testing stationarity in panel data when the data used is unbalanced. Based on the p – values generated by Dickey- fuller unit root test on each panel, test assumes the following hypothesis where,

Null Hypothesis:  $H_0: p_i = 1$  for all  $i$ , implies that all panels contain unit roots.

Alternative Hypothesis:  $H_a: |p_i| < 1$  for at least one  $i$  for finite  $N$

**Table 4:** Fisher- type unit root test

Variable	p - value at level	p - value at 1 <sup>st</sup> difference
FDI	0.5594	0.00 ***
GDP	0.9443	0.00 ***
Exchange rate	0.0026 ***	-
Exports	0.5274	0.00 ***
Imports	1.00	0.00 ***
Gross FCF	0.6864	0.00 ***
Inflation	0.00 ***	-
Interest rate	0.00 ***	-
Reform	0.9589	0.00 ***

\*\*\*  $p < 0.01$  (1% level of significance), \*\*  $p < 0.05$  (5% level of significance), \*  $p < 0.1$  (10% level of significance).

\*\*\* indicates that null hypothesis is rejected at 1% level of significance implying that at least one panel is stationary and exhibits no unit root.

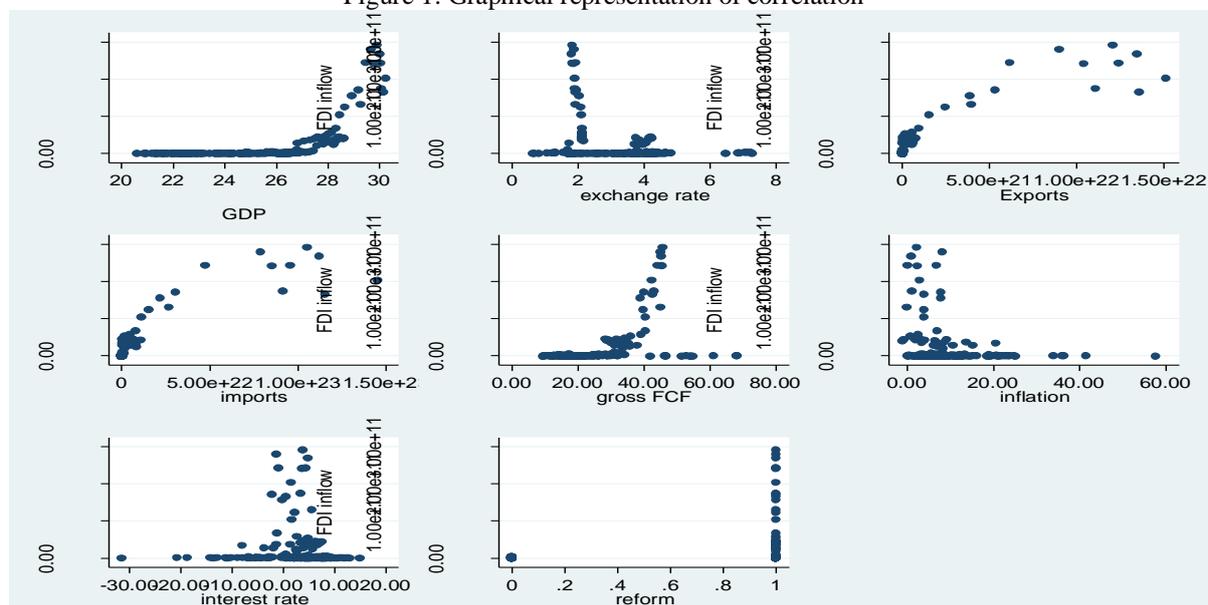
Here exchange rate, inflation and interest rate have order of integration 0 and follows  $I(0)$  whereas FDI, GDP, exports, imports, gross FCF and reforms follow  $I(1)$  as they have order of integration 1.

In order to check the strength of linear association of variables with each other CORRELATION ANALYSIS is undertaken. Results of correlation analysis reveal that there is a very strong positive correlation between FDI and exports and FDI and imports as value approaches near 1. Moderately strong positive correlation is observed between FDI and GDP. Apart from this FDI is positively correlated with gross FCF and reforms. A negative correlation is seen amongst FDI and exchange rate, FDI and inflation and FDI and interest rate.

Since correlation of independent variables is less than 0.80 it can be inferred that there is multicollinearity between the independent variables, which implies that collinearity will not have an impact over the results of regression.

Similar can be observed graphically in Figure 1.

Figure 1: Graphical representation of correlation



(Source: Author's own representation)

**Table 5: Correlation Analysis**

Variable	FDI	GDP	Exchange rate	Exports	Imports	Gross FCF	Inflation	Interest rate	Reform
<b>FDI</b>	100								
<b>GDP</b>	0.61	1.00							
<b>Exchange rate</b>	-0.29	-0.13	1.00						
<b>Exports</b>	0.91	0.49	-0.25	1.00					
<b>Imports</b>	0.89	0.49	-0.24	0.79	1.00				
<b>Gross FCF</b>	0.46	0.29	0.05	0.38	0.37	1.00			
<b>Inflation</b>	-0.20	-0.3	-0.25	-0.18	-0.17	-0.42	1.00		
<b>Interest rate</b>	-0.05	0.12	0.34	-0.03	-0.03	0.29	-0.76	1.00	
<b>Reform</b>	0.20	0.21	0.37	0.14	0.14	0.29	-0.12	0.07	1.00

(Source: Author’s own calculation)

REGRESSION ANALYSIS

**Table 6: Results of pooled OLS, fixed- effect and random- effect regression for model 1**

Independent variable	Pooled OLS	Fixed- effect	Random- effect
<b>GDP</b>	3890*** (589)	12100*** (2560)	3890*** (589)
<b>Exchange rate</b>	-1720* (1010)	-3700** (1730)	-1720* (1010)
<b>Exports</b>	0.00475*** (0.000476)	0.00432*** (0.000482)	0.00475*** (0.000476)
<b>Imports</b>	-0.000372*** (0.0000552)	-0.00034*** (0.000055)	-0.000372*** (0.0000552)
<b>Gross FCF</b>	536*** (122)	263 (337)	536*** (122)
<b>Inflation</b>	-696* (360)	-118 (424)	-696* (360)
<b>Interest rate</b>	-1230*** (417)	-507 (489)	-1230*** (417)
<b>Constant</b>	-87000*** (17200)	-286000*** (58600)	-87000*** (17200)
<b>R<sup>2</sup></b>	0.9091	-	-
<b>(within)</b>	-	0.8597	0.8499
<b>(between)</b>	-	-	0.9917
<b>Adjusted R<sup>2</sup></b>	0.9058	-	-
<b>F- statistic</b>	277.17	164.62	-
<b>F (p- value)</b>	0.00	0.00	-
<b>Chi<sup>2</sup> (p- value)</b>	-	-	0.00
<b>Observations</b>	216	216	216
<b>Countries</b>	7	7	7

Standard errors in parenthesis.

\*\*\* p< 0.01 (1% level of significance), \*\*p< 0.05 (5% level of significance),

\*p< 0.10 (10% level of significance)

(Coefficient values mentioned above are in hundred thousand million USD apart from exports and imports for which it is 0.0001 thousand million USD)

Table 6 shows that results of Pooled OLS and Random - effect regression analysis is similar and results of fixed - effect regression are different from them. The model accounts for relationship of FDI inflow with GDP, exchange rate, exports, imports, gross FCF, interest rate and inflation.

Table 7 shows the results of model 2 which comprises of all the variables as in model 6 along with reform as an additional variable.

**Table 7: Results of Pooled OLS, fixed- effect and random- effect regression for model 2**

Independent variable	Pooled OLS	Fixed- effect	Random- effect
<b>GDP</b>	3670*** (597)	11400*** (2960)	3670*** (597)
<b>Exchange rate</b>	-2690** (1130)	-3760** (1730)	-2690** (1130)
<b>Exports</b>	0.0047*** (0.000474)	0.00433*** (0.000483)	0.000047*** (0.000474)
<b>Imports</b>	-0.00036*** (0.0000521)	-0.000342*** (0.0000551)	-0.000367*** (0.0000549)

<b>Gross FCF</b>	479*** (125)	278 (339)	479*** (125)
<b>Inflation</b>	-739** (359)	-135 (426)	-739** (359)
<b>Interest rate</b>	-1200*** (414)	-511 (490)	-1200*** (414)
<b>Reform</b>	6050* (3140)	1800 (3600)	6050* (3140)
<b>Constant</b>	-80900*** (17400)	-269000*** (67800)	-80900*** (17400)
<b>R<sup>2</sup></b>	0.9108	-	-
<b>(within)</b>	-	0.8599	0.8529
<b>(between)</b>	-	-	0.9908
<b>Adjusted R<sup>2</sup></b>	0.9071	-	-
<b>F- statistic</b>	246.37	143.5	-
<b>F (p- value)</b>	0.00	0.00	-
<b>Chi<sup>2</sup>(p- value)</b>	-	-	0.00
<b>Observations</b>	216	216	216
<b>Countries</b>	7	7	7

Standard errors in parentheses.

\*\*\* p< 0.01 (1% level of significance), \*\* p< 0.05 (5% level of significance),

\* p< 0.10 (10% level of significance)

(Coefficient values mentioned above are in hundred thousand million USD apart from exports and imports for which it is 0.0001 thousand million USD)

The overall value of R<sup>2</sup> which provides insight of goodness of fit of any model is greater for model 2 as compared to model 1 in all the regression techniques signifying model 2 explains greater amount of variations caused by independent variables in our dependent variable. This greater value implies that our additional variable i.e. reforms accounts for significant impact over dependent variable FDI inflows. Apart from observing the value of R<sup>2</sup> for ascertaining the best model, diagnostic tests are performed to specify which method of regression will enable us to draw best result.

#### HAUSMAN SPECIFICATION TEST

The test is used to find out whether fixed effect model or random effect model suits best for regression. Test compares estimator which is known to be consistent with an estimator that is efficient under the assumption being tested.

Null Hypothesis: Ho: Difference in coefficients is not systematic

Alternative Hypothesis: Ha: Difference in coefficients is systematic

**Table 8:** Result of Hausman specification test

Chi <sup>2</sup>	18.33
Prob > chi <sup>2</sup>	0.0055

Our null hypothesis that difference in coefficients is not systematic i.e. model is random effect model is rejected as probability is lesser than 0.05. This implies that fixed effect regression suits better to the model.

#### TESTING FOR TIME FIXED EFFECT

Testparm command is run to ascertain whether time fixed effects are needed over fixed effect regression model.

It sees if the coefficients are jointly equal to zero for all the years or not.

Null Hypothesis: Ho: Coefficients are jointly equal to 0 for all the years.

Alternative Hypothesis: Ha: Coefficients are equal to 0.

**Table 9:** Result of testing for time fixed effect

Chi <sup>2</sup>	5838.23
Prob > chi <sup>2</sup>	0.00

Since probability is less than 0.05 null hypothesis can be rejected, which means that coefficients are not jointly equal to 0 for all the years implying that time fixed effects are essential.

#### BREUSCH PEGAN LAGRANGE MULTIPLIER TEST

This test helps to decide between random effect regression model and pooled OLS regression model. It checks whether variance across entities are zero or not.

Null Hypothesis: Ho: Pooled OLS regression model is appropriate.

Alternative Hypothesis: Ha: Random effect model is appropriate.

Table 10: Breusch Pagan Lagrange multiplier test result

Chibar <sup>2</sup>	0.00
Prob > chibar <sup>2</sup>	1.00

Sine probability is 1, we cannot reject null hypothesis which makes us conclude that pooled OLS model is more appropriate.

#### COMPARISON OF MODELS

Initially for choosing between the two models that is model 1 showing relationship between FDI and GDP, exports, imports, gross FCF, inflation and interest rate and model 2 showing relationship between FDI and GDP, exports, imports, gross FCF, inflation, interest rate an reforms goodness of fit is compared which shows that R<sup>2</sup> is greater for model 2.

Choice between Pooled OLS, fixed effect and random effect regression model on the basis of significance of variables is made. Wherein we see that in Pooled OLS and random effect regression model all our independent variable are statistically significant and in fixed effect regression only GDP, exchange rate, exports and imports are statistically significant in explaining dependent variable FDI inflow. More variables are statistically significant in Pooled OLS and random effect regression model.

Hausman specification test suggest that fixed effect regression model should be considered over random effect regression model and by testing for time fixe effect it is ensured that time fixed effect is important. And by BPL multiplier test results we see pooled OLS method is more appropriate as compared to random effect regression. Considering varied results it can be concluded that fixed effect regression and pooled OLS regression suits better to the study conducted.

#### V. CONCLUSION

FDI plays an important role is amending economies of developing Asian countries which raises the interest to know more about FDI and factors that possess huge influence on inflows of FDI. There exist many factors that affect FDI inflow, out of which here attempts are made to study few namely market size, value of currency, trade, infrastructure, inflation, cost of borrowing and economic reforms with help of data on variables GDP, exchange rate, exports, imports, gross fixed capital formation, GDP deflator, interest rate and reform of seven countries India, Chine, Nepal, Bhutan, Pakistan, Bangladesh and Myanmar for the period 1982- 2020.

The common variables significant in all the types of models and techniques are GDP, exchange rate, exports and imports. Pooled OLS and random effect showed the other variables gross FCF, interest rate, inflation and reforms significant along with above 4.

Policy makers of developing Asian countries have taken various measures by far and surely need more initiatives to improve the influential tools of growth and development of economies of developing Asian countries. Increased need of efforts for attracting FDI is seen in the pursuit of sustainable growth and with the belief that inflows of FDI results in growth automatically. Though FDI does not lead to automatic growth and requires huge absorption capacity to guarantee spill overs, policies and regulations that balance out rights of investors and public interest and active role of government in enhancing absorption capacity by harmonising economic, environmental and social dimensions in accord with internationally recognised standards and principles.

#### VI. RECOMMENDATIONS

1. Focus on liberalisation of industrial sector by means of emphasizing openness of trade and integration of developing Asian countries with global economies for economic development has been proved as an asset for India and China. Needs an extension in other countries too.
2. Following of more rigorous reforms like permitting percentage ownership rights under automatic route of FDI in manufacturing of medical device, telecom and railways, increased cap on FDI in insurance and defence sector, increasing FDI threshold and relaxation of sourcing reforms.
3. Existence of significant intraregional FDI inflows, low labour cost, active governmental role in liberalisation and FDI promotion and strategies in favour of controlled inflation in developing Asian countries are paying off well for these economies. To achieve higher goals of growth these economies control on inflation is needed to greater extent as increasing inflation possess negative impact on FDI.
4. A perfect balance of public and private sector working together towards better implementations of economic reforms will surely head towards upgrading economies.
5. Conscious attempts in order to encourage emigrant investments by strengthening of commercial and economic diplomacy are a must to be taken.
6. Control on corruption at the end of both government and citizens is one of the major concerns which when controlled can facilitate increased FDI inflows in these countries.

7. It is observed that availability of adequate roads, transport system, power and water are still major ground of concern in attracting FDI. Hefty amount of efforts from government's end will play a vital role in enhancing growth.
8. A little relaxation of labour law can work wonders for these economies as stern labour laws discourage Greenfield FDI in the economies.
9. Other hurdles seen in developing Asian economies which needs relation are high rate of tariff barriers, red tapism to massive extent, excessive bureaucracy and perception barriers needs a close check as FDI inflows is affected negatively by them.
10. Policies like double taxation avoidance treaty, from the bucket of tax regime's main achievements of Indian system are needed as it boosts up the level of confidence of investors due to the fact that tax on dividends and corporate profits are disincentives for the investors.

#### LIMITATIONS

1. Since data source is secondary, data is unbalanced due to non- approachability of some sources.
2. There is a scope of extension of sample size and number of countries used in the study.
3. Hands can be extended towards FDI outflows also.
4. And, always there is a scope of adding more variables.

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