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An Analysis of the Impact of GDP, Trade openness, Inflation rate and Market size in Attracting Inward FDI in Bangladesh Based on Empirical Analysis

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Abstract

This study aims to find out the impact of different variables like MKTS, GDP, TO and INFR in attracting FDI in Bangladesh. Using various statistical test like Augmented Dickey- Fuller (ADF) Unit Root Test, Phillips- Perron (PP) Unit Root Test, Granger Casuality Test & Ordinary Least Square Method (OLS Method), this research has found that some variables has positive influence in attracting FDI in Bangladesh where some variables has negative relation with FDI. Data has been analyzed by EViews in OSL regression method and it is found that OLS regression is 0.924341 that indicates 92% representing the variation in independent variables can explain 92% variation in attracting inward FDI. P value for MKTS and GDP is less that 5% that means MKTS and GDP has an impact on FDI and they are statistically significant. OLS regression analysis for another two variables- TO and INFR is not statistically significant as the P value is greater than 5% but they have negative relationship with FDI. This study is actually to make up a decision whether the variables can accelerate the trend of attracting FDI in respect of Bangladesh. Furthermore, this research will show the way to government how to deal with the investors. Therefore , this study is needed to sort the present economic situation of Bangladesh & figure out the most probable reasons & technique to attract more FDI in the country with future research in this field.

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1 Introduction

Economic development is an imperative issue especially for the developing country like Bangladesh. In the age of globalization, source of economy has become a burning issue to exchange views, ideas, capital and human resources. However, a country can be economically developed contributed by many major and minor sectors. FDI is one of them. FDI can emerge as a significant vehicle to build up physical capital, create employment opportunities, develop productive capacity, enhance skills of local labor and help integrate the domestic economy. Countries those are lagging behind to attract FDI, are implementing new policies for attracting more investment. A significant trend is going on over time in the flow of FDI according to UNCTAD. First of all is that foreign investment in developed countries is decreasing whereas it is growing in the developing countries like Bangladesh. According to the world investment outlook 2016, developing Asian countries have seen a rise in the FDI inflow increased by 16% to 541$ bill. A significant growth and economic performance have been derived by East and South Asian economies. Lot of new investment policy measures have been undertaken towards FDI liberalization and promotion. 85% of the total measures are taken in favor of investors showed by world investment report 2016, UNCTAD. Emerging Asian economies were the most attractive destination for the investors. FDI inflow to Bangladesh has traditionally been lower than that of other South Asian countries. But it (FDI) is a powerful weapon to develop the economy of Bangladesh. Government of Bangladesh is trying to create a favorable investment environment through introducing economic policies, incentives and new strategies for investor.

However, like most other developing and least developing countries, Bangladesh considers Foreign Direct Investment (FDI) as an important resource for all kind of development. In order to attract more and more FDI, the country undertook a massive liberalization of its investment program. The Board of Investment (BoI) was established in 1989 by the Investment Board Act to encourage investment in private sector and public sectors, to identify the hindrance of investment programme and provide necessary facilities and assistance for establishing foreign industries. The wide range of services that BoI provides is the investment promotion and facilitation covering support, suggestion and aftercare support to the investors. The prime vision of BoI is to promote domestic and foreign investment as well to enhance international competitiveness of Bangladesh and contribute to overall socioeconomic development of the country. The mobilization of domestic resources as well as encouraging FDI should be augmented. Besides, the law and order situation along with countries politics should be stable so that the foreign and local investors feel safe with their investment. Though the World Bank's projection is quite encouraging, the achievement of this target depends on several factors. There are some definite obstacles that are great impediment on the way to inward FDI in Bangladesh. The most important thing is to ensure socio-political stability and practicing good democracy in all spheres of national life to attract FDI inflow in Bangladesh. So, this paper will discuss the impact GDP, trade openness, inflation rate and market size in attracting Inward FDI in Bangladesh Based on Empirical analysis. There has been a considerable change in the last decade in global trade and commerce especially in flow of inward FDI. Despite a lot of unhappy factors that has affected the normal flow of FDI, FDI inflow in Bangladesh has increased to a great amount. A lot of factors like-trade and exchange liberalization, opening up of infrastructure, liberalization of the investment regime, emphasis on private sector, services provided to private sectors and

above all foreign investors' interest have been contributed much to get better hand from the developed nation. Bangladesh now is going through an economic & industrial transition where it needs more domestic and international investment. But it is a duty on the govt. part to make investors feel assure that their role in the business arena of Bangladesh is valued and hazard less. In this connection, friendly regulations, simplifying regulatory practices, investment incentives and removal of inefficient bureaucratic procedures should be ensured. Problems on the way of inward FDI in Bangladesh should meet a well solution and new strategies should be taken to attract inward FDI to accelerate the economic growth of Bangladesh.

2 Literature Review

Foreign Direct Investment is the category of international investment that reflects the objective of a resident entity in one economy obtaining a lasting interest in an enterprise resident in another economy. There is global race for attracting FDI, but how much it can contribute to host country's economic development is a matter of assessment. Hussain & Haque (2016), using ADF test, PP test and co-integration test in their study showed that Bangladesh needs more and more FDI and there is long term relationship between FDI and economic growth of Bangladesh. Rahman (2015), in his "Impact of Foreign Direct Investment on Economic Growth: Empirical Evidence from Bangladesh," using simple linear regression of variables such as FDI, GDP, inflation and balance of trade (BOT) related to FDI shows that there is a positive relation between FDI and GDP growth rate, a negative relation between FDI and inflation rate. His research further focuses on the problems like political instability, inadequate infrastructure, a slow moving privatization process, unskilled labor force, inefficient bureaucracy, and recurring natural disasters. Besides, lack of transparency, corruption also increases the difficulty of attracting FDI in Bangladesh. Ghebrihiweta et al (2017), in their "Relationship between FDI, foreign ownership restrictions, and technology transfer in the resources sector: A derivation." argued that many developing countries have to depend on FDI where FDI can bring some effects transferring technology. Ghebrihiwet et al (2017), in their "Relationship between FDI, foreign ownership restrictions, and technology transfer in the resources sector: A derivation approach" considered multinational industries as the dominant players in attracting FDI and proved that foreign ownership restriction in FDI reduced the normal flow of investment and the result is a negative impact on host country welfare. Shylajan (2011), in his "FDI & Its Determinants in India," using GDP, inflation, interests rate and trade openness as his multiple regression variables found out the determinant of FDI and determines how India can attract more FDI. He considered foreign direct investment as the lifeblood of economic development of any country especially for developing and underdeveloped countries.

Rajput & Garg (2012), in their "Trends and patterns of flow of FDI in developed countries and developing countries: a comparison" emphasized on FDI as a measure of increasing economic globalization considering it as the battle ground for emerging economy. They further considered FDI as one of the greatest reward for both countries to ensure a win-win situation. Moussaa et al (2016), in their "Review of Economic Freedom Impact on FDI: New Evidence from Fragile and Conflict Countries" taking into account some neglected regions such as Post-Soviet, Sub-Saharan, and Conflict-Affected countries in a panel data analysis investigated the economic freedom which can have impact on FDI inflow globally. Sauvant (2015), "Attracting Foreign Direct Investment and Benefiting from it: Challenges for the Least Developed Countries," opined that LDCs should attract more and more FDI to get benefit as much as

possible to develop their economy. Here he mentioned that a increasing share of FDI goes to manufacturing and services sectors in these countries. The investors and the world community need to support them in order to make sure a contribution to economic growth and development. Benassy-Quere et al (2005), in their "Institutional Determinants of Foreign Direct Investment" considering FDI as a technological vehicle argued FDI as the most stable component of capital flows to developing countries.

Duran (1999), using the panel data and time series technique from 1975-1995 observed that domestic savings rate, growth, country's solvency, market size, trade openness and macroeconomic stability variables are very important factors of FDI. Rihab & Lotfi (2011), in their "The institutional and cultural determinants of foreign direct investment in transition countries," showed the impact of institutional and cultural determinants of foreign direct investment to attract inward FDI. They had found a good relation between different variables like FDI and political & cultural stability, economic openness, human resource, market size. Nistor (2014), in "FDI and the economic growth, the case of Romania" considered FDI important for emerging economy as important for the developed economy even though their goal is completely different. The research further showed that FDI inflows stimulate domestic investment. Sahain (2013), in his "Determinants of Foreign Direct Investment: A Study on Bangladesh" argued that Countries that are lagging behind to attract FDI are implementing new policies for attracting more investment. FDI inflow to Bangladesh has traditionally been lower than that of other South Asian countries. He says that economy is the most supreme power in the present world. So FDI is the key component for Bangladesh. Kumer (2002), showed that Foreign Direct Investment (FDI) has emerged as the most important source of external resources flows to developing countries over the 1990s and has become a significant part of capital formation in the country despite their share in global distribution of FDI continues to remain small or even declining. Beven and Estrin (2000), had a research on the determinants of FDI inflows to transition economies (Central and Eastern Europe) by taking determinant factors as country risk, labor cost, host market size and gravity factors from 1994 to1998. The study observes that country risks is influenced by private sector development, Industrial development, the government balance, reserves and corruption. A dummy variable employed for capturing the key announcements of progress in EU accession seems to be directly influencing the FDI receipts. Saha (2012), said that for the smooth running of the wheel of economy, Foreign Direct Investment (FDI) is urgent for developing countries which can accelerate the economic growth. He again opined that FDI can ensure the capital to be invested by the foreigners or world investors or by an entity separately or along with the local investors to remove the distance between the savings and investment. Islam (2014), in his "Foreign Direct Investment (FDI) in Bangladesh: Prospects and Challenges and Its Impact on Economy," opined that FDI is the vital ingredients for overall development of a developing country. He further opined that as Bangladesh is transforming from agrarian economy to industry based economy, therefore FDI is an important issue for economy. Albulescu et al (2014), in "The impact of FDI on entrepreneurship in the European Countries" using panel data of 16 European countries opined that inward FDI has a positively influence on the opportunity of the host country. Misztal (2010), examined the influence of FDI on the economic growth in the Romania in period of 2000-2009 using the Vector Autoregression Model (VAR) and found linear relationship between FDI and economic growth. Shaheena (2014), in FDI inflows in Bangladesh: Identifying its major Determinants, opines FDI as the important pivotal for developing countries to strengthen economy. Loree and Guisinger (1995), study on the determinants of FDI had found the host country policy related variables

to attract FDI. They also said that infrastructure seems to be an important determinant for all the regions.

3 Methodologies

Time Reference

In undertaking this research, the study has used the data on related variables dated from1997-2016 (20 years).

Sources of data

This paper will be fully based on secondary time series data. The relevant time series data for this study are collected from different sources such as Statistics and Research Department of Bangladesh Bank (Central Bank of Bangladesh), Board of Investment and Development authority (BIDA) Bangladesh, Bangladesh Bank Bulletin, Bangladesh Ministry of Finance, Economic Trend, Bangladesh Economic Review, World Investment Report 2014 & 2015 published by UNCTAD, others national and international research journals and articles.

Measuring variables

Foreign Direct Investment

A long term investment by a foreign legal person or other economic organizations or an entity alone or jointly to create a new enterprise in the host country, or to increase the capital expansion of the enterprises is defined as FDI.

Market Size

Market size is an important task for business and marketing planning, especially those who seek to invest their capital in the form of FDI. Even though their investment philosophies may differ, most of the investors would like to know that they are investing in a market with a large potential size.

Gross Domestic Product (GDP)

The total market value of the final goods and service in a country produced within a given period is termed as GDP. Many factors are responsible to accelerate GDP. If the GDP of a host country looks good, the foreign investors are confident about the prosperity and potentiality of that country and willing to bring their money to invest there. The best way to find the economic environment in a country is to look at the GDP. FDI investors also consider the matter before investing. Investors like to invest in the countries with higher GDP. So, GDP of a country has a positive impact in attracting Foreign Direct Investment.

Trade openness

Trade openness implies the total amount of import and export/GDP. The total volume of foreign trade of a country or a region can embody the open extent. Generally, the higher trade openness means, the bigger investment opportunities and better communication & economic activities. Economic openness also can improve regional trade growth and has a positive impact on FDI.

Inflation rate

The reduction in the purchasing power of a currency or the increase in the general level of prices for goods and services in a county is termed as inflation. Under conditions of inflation, the prices of things rise over time. When prices rise, and alternatively the value of money falls and there is inflation. It has a negative effect in attracting inward FDI in Bangladesh.

4 Statistical Tools

Model Specification

To investigate the impact of different variables on FDI, the model is assumed here-

$$\ln FDI = \alpha + \beta 1(\ln MKTS) + \beta 2\ (\ln GDP) + \beta 3(\ln TO) + \beta 4(\ln INFR) + \varepsilon$$

Here, lnFDI =Foreign Direct Investment (FDI billionUSD)
lnMKTS =Market Size
lnGDP = Gross Domestic Product (GDP billionUSD)
lnTO = Trade Openness
lnINFR = Inflation Rate
α = Intercept
β =Coefficient
ε =Error Term

β1, β2, β3 and β4 are the coefficient of respective variables. In the assumed model lnFDI (Foreign Direct Investment) is dependent variable and lnMKTS, lnGDP, lnTO, and lnINFR are the independent or explanatory variables.

5 Data Analysis

5.1 Stationary Test (ADF test)

To do stationary Test, The Unit Root Test has been done here to check whether the variables used in this research are stationary or not. To complete this Unit Root Test, we have selected Augmented Dickey-Fuller Test. For the reliability of the result of the analysis, data should be stationary. If the data is non-stationary, the result obtained from the test will be invalid. In Table 5-1

Augmented Dickey-Fuller Test Statistics and critical values for two cases of the test equation (with constant & without constant) has be presented. So the null hypothesis is that the variable has unit root i. e. non-stationary. The decision rule is—

If the t-statistics (t*) > ADF critical value, we fail to reject the null hypothesis. That means unit root exists. (Variable is non-stationary)

If the t-statistics (t*) < ADF critical value, we reject the null hypothesis. That means unit root does not exist. (Variable is stationary)

Table 5-1: Result of Augmented Dickey-Fuller (ADF) Test statistics

Variables	ADF (Intercept)				ADF (None)			
Level t-stat	critical values	1st difference t-stat	critical values		Level t-stat	critical values	1st difference t-stat	critical values
lnFDI	-3.831511***	-4.338724	-3.857386***		1.709717	-2.692358***	-3.902231	-2.699769***
0.652725	-3.029970**		-3.040391**			-1.960171**		-1.961409**
	-2.655194*		-2.660551*			-1.607051*		-1.605510*
lnMKTS -	-3.831511***	-3.738340	-3.959148***		0.344828	-2.692358***	-4.484128	-2.699769***
1.813971	-3.029970**		-3.081002**			-1.960171**		-1.961409**
	-2.655104*		-2.681330*			-1.607051*		-1.606610*
lnGDP	-3.831511***	1.193550	-4.004425***		11.74903	-2.692358***	0.813064	-2. 699769***
9.423946	-3.029970**		-3.098896**			-1.960171**		-1. 961409**
	-2.655194*		-2.690439*			-1.607051*		-1. 60661*
lnTO -	-3.832511***	-3.832883	-3.857386***		0.823677	-2.692358***	-3.745695	-2. 699769***

1.279364	-3.029970**		-3.040391**		-1.960171**		-1. 961409**
	-2.655194*		-3.660551*		-1.607051*		-1. 60661*
lnINFR -	-3.832522***	-5.110074	-3.857386***	-0. 323899	-2.692358***	-5.252101	-2.699769***
2.213452	-3.029970**		-3.040391**		-1.960171**		-1.961409**
	-2.655194*		-2.660551*		-1.607051*		-1.606610*

N.B: The null hypothesis is that the variable is non-stationary. The variable is non-stationary when the ADF test statistics is greater than the test critical value. Subscription ***, **, and * indicates the critical value at 1%, 5% and 10% level of significance.

The result obtained from the Augmented Dickey-Fuller (ADF) Test has been shown in the table 5-1 At level with intercept, the computed ADF test-statistics (0.652725) of lnFDI that is greater than the critical values (-3.831511, -3.029970 and -2.655194 at 1%, 5 % and 10% significant level respectively). Therefore, we can't reject the null hypothesis. That means the log of FDI (lnFDI) series has unit root problem and lnfDI is a non-stationary time series. If we do ADF test without trend and intercept (none) at level, lnFDI series has also a unit root problem. But if we test at first difference both for Intercept and for None, the computed ADF test-statistics is smaller than the critical values. At Intercept ADF t-statistics -4.338724 where the critical values are -3.857386, -3.040391 and -2660551 at 1%, 5% and 10% significant level respectively. At None ADF t-statistics -3.902231 where the critical values are -2.699769, -1.961409 and -1.605510 at 1%, 5% and 10% significant level respectively. That means we can reject the null hypothesis and the variable lnFDI in first difference become stationary and it is integrated of order one I (1). The Augmented Dickey-Fuller test statistics at level with Intercept for log of market size is -1.813971 which is greater than the critical values -3.831511, -3.029970 and -2.655104 at 1%, 5% and 10% significant level respectively. So we fail to reject the null hypothesis and log Market Size (lnMKTS) has unit root problem (non-stationary). When we take the first difference both for Intercept and for None, the computed ADF test-statistics is smaller than the critical values and it becomes stationary. So it is integrated of order one I (1). Similarly we found the ADF test-statistics for lnGDP, lnTO and lnINFR both at Intercept and None with level has unit root problem. That, means they are non-stationary. And when we take first difference both for Intercept and None, we can overcome the unit root problem. That means ADF test-statistics for lnGDP, lnTO and lnINFR is smaller than the critical values at 1%, 5% and 10% significant level respectively and they (the series) are integrated of order one I (1).

5.2 The Phillips-Perron (PP) Unit Root Test

The alternative test for checking the existence of unit root is The Phillips-Perron (PP) Unit Root Test. The asymptotic distribution of the PP test result is same as the ADF test statistics. The results from PP test are presented in the following table in terms of Intercept and None. We have tested all five variables- foreign direct investment (FDI), Market Size (MKTS), Gross Domestic Product (GDP), Trade Openness (TO), and Inflation Rate (INFR). The variables are used in logarithmic form (lnFDI, lnMKTS, lnGDP, lnTO and lnINFR). The bandwidth is automatically selected. The hypothesis is that that variable has unit root. So the decision rule as follows—

If the t-statistics (t*) > PP-test critical value, we fail to reject the null hypothesis. That means unit root exists. (Variable is non-stationary)

If the t-statistics (t*) < PP-test critical value, we reject the null hypothesis. That means unit root does not exist (Variable is stationary).

The Phillips-Perron (PP) Unit Root Test results for the logarithms of level with Intercept and None is presented in the Table 5.2-1 and Table 5.2-2. We found that all PP test-statistics at level are greater than the critical values at 1%, 5% and 10% significant level that means the variables have unit root (non-stationary). But if we take the first difference both for Intercept and None, the critical values that we got are lower than the PP-test statistics. That means the variables become stationary for all cases [with intercept and no trend no intercept (none)]. So the variables are integrated of order in zero and in first difference and same as ADF-Dickey Fuller test.

Table 5.2-1: Phillip-Perron Unit Root Test (Intercept)

Variables	PP Test (Intercept)			
	Level t-stat	Critical value	1st difference t-stat	Critical value
lnFDI	1.338241	-3.831511***	-4.338724	-3.857386***
		-3.029970**		-3.040391**
		-2.655194*		-2.660551*
lnMKTS	-1.864397	-3.831511***	-5.478687	-3.857386***
		-3.029970**		-3.040391**
		-2.655194*		-2.660551*
lnGDP	17.59012	-3.831511***	0.840662	-3.857386***
		-3.029970**		-3.040391**
		-2.655194*		-2.660551*
lnTO	-1.230805	-3.831511***	-4.012399	-3.857386***
		-3.029970**		-3.040391**
		-2.655194*		-2.660551*
lnINFR	-2.213452	-3.831511***	-5.515335	-3.857386***
		-3.029970**		-3.040391**
		-2.655194*		-2.660551*

N.B: The null hypothesis is that the variable is non-stationary. The variable is non-stationary when the PP test statistics is greater than the test critical value. Subscription ***, **, and * indicates the critical value at 1%, 5% and 10% level of significance.

Table 5.2.2: Phillip-Perron Unit Root Test (None)

Variables	PP Test (None)			
	Level t-stat	Critical value	1st difference t-stat	Critical value
lnFDI	-2.460659	-2.692358***	-3.901618	-2.699769***
		-1.960171**		-1.961409**
		-1.607051*		-1.606610*
lnMKTS	1.065511	-2.692358***	-5.162411	-2.699769***
		-1.960171**		-1.961409**
		-1.607051*		-1.606610*
lnGDP	9.257175	-2.692358***	2.069745	-2.699769***
		-1.960171**		-1.961409*
		-1.607051*		-1.606610*
lnTO	1.190738	-2.692358***	-3.717691	-2.699769***
		-1.960171**		-1.961409**
		-1.607051*		-1.606610*
lnINFR	-0.069168	-2.692358***	-5.649959	-2.699769***
		-1.960171**		-1.961409**
		-1.607051*		-1.606610*

N.B: The null hypothesis is that the variable is non-stationary. The variable is non-stationary when the PP test statistics is greater than the test critical value. Subscription ***, **, and * indicates the critical value at 1%, 5% and 10% level of significance.

5.3 OLS Regression Method & output

The result of Ordinary Least Square (OLS) regression has been presented in Table 5.3-1. Generally we know that if the R-squared value of OLS is 65%, it shows the model is moderately adequate and if R-squared value is more than 80% then the accuracy of the model fitness is very good. It is also know that if the P value of an individual variable is less that 5% then that variable has a significant impact on the dependent variable and it is statistically significant.

Table 5.3-1: Result of OLS regression

Dependent Variable: FDI
Method: Least Squares
Date: 12/21/17 Time: 21:24
Sample: 1997 2016
Included observations: 20

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-62.83309	31.58613	-1.989262	0.0652
MKTS	18.42442	6.354955	2.899221	0.0110
GDP	0.795280	0.117489	6.768978	0.0000
TO	-0.717149	1.177921	-0.608826	0.5517
INFR	-1.716280	2.965800	-0.578690	0.5714

R-squared	0.924341	Mean dependent var	86.25650
Adjusted R-squared	0.904166	S.D. dependent var	48.10672
S.E. of regression	14.89245	Akaike info criterion	8.451903
Sum squared resid	3326.775	Schwarz criterion	8.700836
Log likelihood	-79.51903	Hannan-Quinn criter.	8.500498
F-statistic	45.81476	Durbin-Watson stat	1.882155
Prob(F-statistic)	0.000000		

Table 5.3-1 displays the R-squared value of OLS regression is 0.924341 that indicates 92%. It means the model is fitted well and the variation in independent variables can explain 92% variation in attracting inward FDI. Again the P value for MKTS and GDP is less that 5% that means MKTS and GDP has an impact on FDI and they are statistically significant having a positive relation with FDI. OLS regression analysis for another two variables- TO and INFR is not statistically significant as the P value is greater than 5% but they have negative relationship with FDI. So we can say that the model used here is fitted well and our model is—

$$\ln FDI = \alpha + \beta 1(\ln MKTS) + \beta 2\ (\ln GDP) + \beta 3(\ln TO) + \beta 4(\ln INFR) + \varepsilon$$
$$= -62.83309 + 18.42442(\ln MKTS) + 0.795280(\ln GDP) - 0.717149(\ln TO) - 1.716280(\ln INFR)$$

From table 5.3-1, if we use the computed overall F test from OLS test whether there is a significant relationship between dependent and independent variables or not. The computed OLS F-stat (45.81476) is also greater than the critical values (-1.98262, 2.899221, 6.768978, -0.608826 and -0.578690) of different variables. We know, if the F-STAT > critical values at 5% significant level, we can reject the null hypothesis. That means there is a significant relationship among the variables and at least one of the variables is significantly related to dependent variables. Again the P-value of F-stat is smaller (0.000000) than 0.05. That is also statistically significant. We found that the residual of our OLS model is not serially correlated (shown in the Annex 1). Chi-Square is more than 5% and it is 87%. That means P-value is more than 0.05. So our model is free from serial correlation and it is desirable for any model. Besides, the Chi-Square we got from the test result of heteroskedasticity is 57% that is more than 5% and it is statistically not significant (Annex 2). So, it means there is no heteroskedasticity in the model. And finally we got the result of residuals analysis. Here the P-

value of Jarque-Bera (Annex 3) is 86% that is more than 5% and not significant level. So the residuals are normally distributed (annex) in the model and that is expected.

5.4 Granger Causality Test

Table 5.4-1 presents the Granger Causality Tests result. GDP does Granger Cause FDI, MKTS does Granger Cause TO, TO does Granger Cause GDP because their P-value is less than 5%. MKTS does not Granger Cause FDI, FDI does not Granger Cause MKTS, FDI does not Granger Cause GDP, TO does not Granger Cause FDI, FDI does not Granger Cause TO, INFR does not Granger Cause FDI, FDI does not Granger Cause INFR, GDP does not Granger Cause MKTS, MKTS does not Granger Cause GDP, TO does not Granger Cause MKTS, INFR does not Granger Cause MKTS, MKTS does not Granger Cause INFR, GDP does not Granger Cause TO, INFR does not Granger Cause GDP, GDP does not Granger Cause INFR, INFR does not Granger Cause TO, TO does not Granger Cause INFR because their p-value is greater than 5%.

Table 5.4-1: Granger Causality Tests

Pairwise Granger Causality Tests
Date: 01/18/18 Time: 21:53
Sample: 1997 2016
Lags: 2

Null Hypothesis:	Obs	F-Statistic	Prob.
MKTS does not Granger Cause FDI	18	0.27044	0.7672
FDI does not Granger Cause MKTS		2.73287	0.1022
GDP does not Granger Cause FDI	18	6.30832	0.0122
FDI does not Granger Cause GDP		1.21205	0.3291
TO does not Granger Cause FDI	18	0.28355	0.7576
FDI does not Granger Cause TO		0.52844	0.6017
INFR does not Granger Cause FDI	18	0.64648	0.5399
FDI does not Granger Cause INFR		0.37653	0.6935
GDP does not Granger Cause MKTS	18	2.27992	0.1417
MKTS does not Granger Cause GDP		0.63848	0.5439
TO does not Granger Cause MKTS	18	1.06068	0.3744
MKTS does not Granger Cause TO		8.68211	0.0040
INFR does not Granger Cause MKTS	18	1.69445	0.2218
MKTS does not Granger Cause INFR		0.85175	0.4492
TO does not Granger Cause GDP	18	12.6312	0.0009
GDP does not Granger Cause TO		0.40959	0.6722
INFR does not Granger Cause GDP	18	0.45246	0.6457
GDP does not Granger Cause INFR		0.31055	0.7383
INFR does not Granger Cause TO	18	0.72438	0.5032
TO does not Granger Cause INFR		1.07420	0.3700

6 Analysis of the result

OLS has been applied to analyze the data from 1997-2016 on different variables to find out the impact in attracting inward FDI in Bangladesh. The result that has been derived from the regression has proved that Market size and GDP have significant impact in FDI and the relationship among Market size and GDP with FDI is positive whereas the other two variables- trade openness and inflation rate don't have significant impact on FDI and there exist a negative relation among FDI and trade openness and inflation rate. So on the basis of the OLS regression result, it can be finalized that two hypothesis (Market Size has positive

&significant impact on FDI, Gross Domestic Product positive &significant impact on FDI) are accepted, except the hypothesis Trade Openness has a positive impact on FDI and Inflation Rate has a positive &significant impact on FDI. Trade Openness (Economic oneness) and Inflation rate have negative influence on attracting inward FDI in Bangladesh. Trade openness rate in the country is not too much satisfactory as higher tax rate and VAT are imposed by the government frequently. On the top of this, customs harassment and the corruption has negative impediment on the smooth flow of international trade. Lower trade openness means the trade freedom for the investors in very poor. So trade openness has a negative impact on FDI. On the other hand, inflation rate also has negative relation with FDI.

7 Conclusion

After analyzing the data, the result we got from the regressions proves that GDP and Market Size have the significant influence in attracting inward FDI in Bangladesh. In the recent years, Bangladesh has been maintaining a good GDP and the market size is also expanding for the world investors. The internal production and the foreign aid of the country are increasing rapidly that accelerates net GDP of Bangladesh. Moreover, GDP growth rate is very good in the recent past to attract more FDI. Trade openness of Bangladesh is not favorable for FDI at all. Lots of trade barriers are imposed on imports foreign products in the country especially to protect the domestic industries and market. Though it is believe that economic openness can transfer technology and skills, increase labor and productivity with economic growth, trade openness in Bangladesh is lower than that of other South Asian countries. Another variable-inflation rate is also discouraging the proper investment in the country. When inflation reflects a reduction in the purchasing power per unit of money, each unit of money buys less goods and services. It can affect the economy of Bangladesh increasing the opportunity cost of holding money and uncertainty. Finally that can discourage investment and savings. But the regressions result that this research has got from the analysis for trade openness and inflation rate don't affect FDI attraction in Bangladesh.

8 Recommendations

As Bangladesh is a developing country in the South East Asia, there are some limitations in attracting inward FDI in the country. Though there are some problems and limitations that Bangladesh is undergoing now, it can attract more flow of FDI taking geographical and human resource advantages. After analyzing the data and the information, the research has recommended some recommendations for the policy makers of Bangladesh to attract more FDI inflow. First of all,Bangladesh government must pay attention to accelerate good GDP.
With a good control of the supply of money to reduce the inflation rate.
In order to develop an especial economic zone with other South Asian countries, Bangladesh needs to reduce the trade barriers for high economic openness. Government should emphasize on labor intensive, import substitute, and export oriented industries to attract more FDI. Again its must to ensure flexible exchange rate, develop in modern technology related to industrial development and improving financial sector accountability in a cooperation with Bangladesh Board Investment (BOI). BOI should monitor the investment environment and opportunities. Further more, government can start different kind of incentives especially for the foreign investors & take long term especially for five-years or ten-years plan in hand and long term agreement with the investors. Finally, Bangladesh government must develop both public and private sectors and encourage them to participate in the investment program spontaneously.

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Annex

Annex 1 Serial correlation test

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.069360	Prob. F(2,9)	0.9335
Obs*R-squared	0.273228	Prob. Chi-Square(2)	0.8723

Test Equation:
Dependent Variable: RESID
Method: Least Squares
Date: 01/18/18 Time: 21:06
Sample: 1999 2016
Included observations: 18
Presample missing value lagged residuals set to zero.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	0.011662	0.245930	0.047419	0.9632
C(2)	0.021505	0.369830	0.058149	0.9549
C(3)	-0.108253	8.074699	-0.013406	0.9896
C(4)	0.006658	1.084198	0.006141	0.9952
C(5)	0.090939	1.570657	0.057899	0.9551
C(6)	-0.213712	3.128446	-0.068312	0.9470
C(7)	-0.186346	11.51071	-0.016189	0.9874
RESID(-1)	-0.113391	0.507095	-0.223609	0.8281
RESID(-2)	-0.096636	0.392080	-0.246470	0.8108

R-squared	0.015179	Mean dependent var	4.84E-15
Adjusted R-squared	-0.860217	S.D. dependent var	13.17094
S.E. of regression	17.96381	Akaike info criterion	8.921449
Sum squared resid	2904.287	Schwarz criterion	9.366635
Log likelihood	-71.29304	Hannan-Quinn criter.	8.982834
F-statistic	0.017340	Durbin-Watson stat	1.755239
Prob(F-statistic)	0.999997		

Annex 2 Heteroscedasticity test

Heteroskedasticity Test: Breusch-Pagan-Godfrey

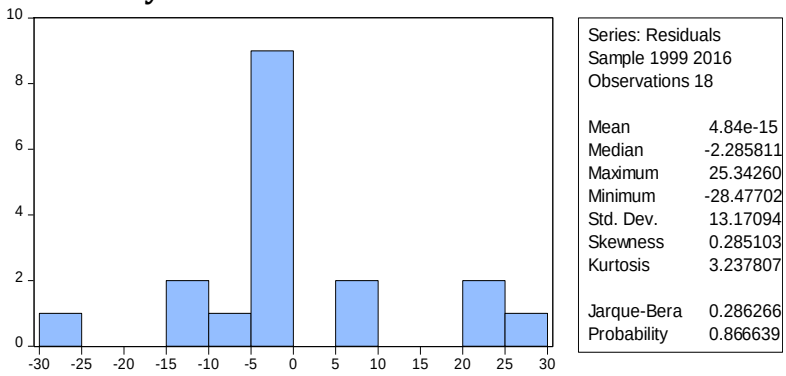
F-statistic	0.635699	Prob. F(10,7)	0.7512
Obs*R-squared	8.566735	Prob. Chi-Square(10)	0.5737
Scaled explained SS	3.579714	Prob. Chi-Square(10)	0.9643

Test Equation:
Dependent Variable: RESID^2
Method: Least Squares
Date: 01/18/18 Time: 21:16
Sample: 1999 2016
Included observations: 18

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1689.325	1804.218	0.936320	0.3803
FDI(-1)	-3.062081	6.920007	-0.442497	0.6715
MKTS(-1)	-152.1069	269.7534	-0.563874	0.5904
GDP(-1)	-13.46319	30.12973	-0.446841	0.6685
TO(-1)	-47.55603	76.42918	-0.622224	0.5535
INFR(-1)	85.04708	61.19015	1.389882	0.2072
FDI(-2)	7.573044	8.885692	0.852274	0.4223
MKTS(-2)	39.34699	405.8250	0.096956	0.9255
GDP(-2)	19.97099	30.38801	0.657200	0.5321
TO(-2)	-29.79854	35.92567	-0.829450	0.4342
INFR(-2)	98.67496	70.67454	1.396188	0.2053

R-squared	0.475930	Mean dependent var	163.8362
Adjusted R-squared	-0.272742	S.D. dependent var	252.1930
S.E. of regression	284.5137	Akaike info criterion	14.41720
Sum squared resid	566636.4	Schwarz criterion	14.96132
Log likelihood	-118.7548	Hannan-Quinn criter.	14.49223
F-statistic	0.635699	Durbin-Watson stat	1.857467
Prob(F-statistic)	0.751233		

Annex 3 Residual normality test



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