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Factors Affecting the Currency Exchange Rates in Bangladesh: An Application of Autoregressive Distributed Lags Bounds Testing Approach

Abstract

The present study has been carried out to identify the determinants of the exchange rate of Bangladesh. ARDL model has been used to carry out this econometric analysis and the time period that has been selected from 1990 to 2021. The independent variables were inflation, gross domestic product, gross capital formation and deposit rates. Of these, the significant variables were gross domestic product and deposit rates. Deposit rates have the highest negative coefficient implying that it might be the most impactful in stabilizing the rising exchange rate of Bangladesh. Regression output sets corner stones to think about policy implications and further decision making to the relevant stakeholders from home and abroad.

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1. Introduction

The exchange rate is the value of one currency for the purpose of converting to the currency of another country. It plays a prominent role in international trade. In this era of globalization, it is an extremely important factor because lower exchange rate is responsible for lowering the cost of imports and lowering the profit from exports while higher exchange rate results in the opposite. Appreciation of currency has a greater impact on foreign trade (Chowdhury and Hossain, 2014). Due to the increased importance of international trade and foreign investments, exchange rate among various currencies has become a huge concern due to its influence on imports and exports of a country. As countries become more and more reliant on international trade and increasing open economics, the importance foreign exchange rates will keep increasing. Direct investments in emerging countries have increased substantially during the last few years. For valuing such investments, considering only the country risk premium is not enough since it does not reflect a wide range of uncertainty in emerging markets (Bristy, 2017).

One of the most powerful economic policy tools is exchange rate influences price stability, stable economic growth, structural change, efficient resource allocation and development of international trade. As most of the countries are adopting a floating exchange rate system, developing countries like Bangladesh have been facing high exchange rate volatility. Unpredictable price movements in the economy are created due to high exchange rate volatility. So, it has become a necessity for Bangladesh to find a way to ensure relative stability of foreign exchange rates in order to continue its development in terms of trade, finance or economy as a whole.

As a result, it is extremely important for carrying out research regarding which factors are responsible for determining the exchange rate of the country. Some research has been conducted, but most of this has been based on simple regression models but this study being carried out in a new econometric approach with the help of the ARDL model. So, the objective of this study is to determine the factors responsible for affecting the value of BDT in comparison to USD. The study has shown a detailed review of related literature to determine the appropriate methodology for analysis. Analysis of the actual impact of the factors have been conducted. And, the ultimate findings have been presented. Finally, some concluding remarks have been provided.

2. Literature Review

Exchange rates have received a lot of attention during the years due to the growing importance of international trade. This is the reason quite a number of research works have been carried out to identify its determinants. Mirchandani (2013) carried out analysis of macroeconomic determinants of exchange rate in India and found that exchange rate is negatively correlated with interest rate, indirectly correlated with inflation rate and also identified a moderate positive relationship with GDP. It was also concluded that the currency of India has shown high volatility over the years and its depreciation was a natural outcome.

Chowdhury and Hossain (2014) conducted a study to analyze the determinants of exchange rates of Bangladesh from a period of 1990 to 2011. Their findings state the exchange rate has a positive relationship with interest rate, inflation rate, GDP growth rate and current account balance. Bristy (2017) attempted to identify the factors responsible for determining the exchange rate of Bangladesh from a period of 1999-2013. 16 macroeconomic variables were selected in this study. It was concluded that government expenditure, broad money supply, gross capital formation, primary income payments, gross domestic product, external debt stock, and gross national income are the most important factors. Total reserve, current account balance deposit rate is moderately important and inflation, lending rate, net financial account, net capital account, foreign direct investment, primary income receipts are the least important factors.

Benazic and Kersan-Skabic (2016) researched about the determinants of exchange rates in Croatia and found that the ratio between foreign currency deposits and total time and savings deposits and international reserves are insignificant in the long run. On the other hand, the ratio between kuna loans indexed to foreign currency and total loans, FDI, and consumer prices are the

most significant factors in determining the exchange rate equation, which are followed by the export/import coverage and external debt. Kilicarslan (2018) worked on the determinants of exchange rate volatility in Turkey and found that real effective exchange rate volatility is positively and significantly correlated with domestic investments, money supply and trade openness. While output and government expenditures are significantly and negatively correlated with real effective exchange rate volatility.

Raza and Afshan (2017) attempted to identify the determinants of exchange rate in Pakistan with structural break testing and found that the significant coefficients were terms of trade and trade openness and both of had a negative relationship with exchange rates. Bidirectional causal relationship of exchange rate with economic growth and trade openness in Pakistan can be foudn through the Granger causality test. And, inflation, money supply and terms of trade possess the unidirectional causality with the exchange rate of Pakistan.

Venkatesan and Ponnamma (2017) conducted an analysis of macroeconomic factors affecting foreign exchange rate of India and found the most significant coefficient was foreign direct investment. After that, the next significant coefficients were inflation. From the Granger causality test, it can be seen that inflation rate, CAD, FDI, interest rate, oil price had an impact on each other which has an overall effect on the exchange rate of India.

Saeed et al. (2012) conducted an econometric analysis on the determinants of exchange rate in Pakistan and found that Empirical results confirm that foreign exchange reserve balance, stock of money and debt are significant determinants of exchange rate between Pakistani Rupee and US Dollar in relative terms. Finally, political instability has a significant negative effect.

3. Methodology

In order to find out the relevant determinants of the exchange rate in Bangladesh we have used the ARDL model. The main reason for utilizing the ARDL model is that, unlike VRM or VECM model, all the variables included in the model do not have to be stationary at the same order.

To check if the dataset is stationary at level or first difference or both, we have conducted an ADF test. ADF test uses various test equations depending on the nature of the time series being considered.

Hypothesis of ADF test:

H_0***: θ = 0 (data are not stationary)***

H_1***: θ < 0 (data are stationary)***

This test determines whether the variable has unit root (indicating non-stationarity) or has no unit root (indicating stationarity). So the decision to choose the ARDL model has been based on the stationarity of the variables included.

As we have found that the variables that have been considered are stationary at different levels, we had to choose the ARDL model. The simple linear regression form of the model is given below:

$$EXR_t = ь_0 + ь_1 GDP_t + ь_2 INF_t + ь_3 DR_t + ь_4 GCF_t + υ_t \quad \text{..... Equation (i)}$$

Here,

EXR_t = Exchange rate (USD/BD) at time *t*

GDP_t = Gross domestic product at time *t*

INF_t = Inflation at time *t*

GCF_t = Gross capital formation at time *t*

$ь_0$ is constant and $ь_1$, $ь_2$, $ь_3$, $ь_4$ are coefficients and υ_t is the error term.

The ARDL representation of the equation is given as follows:

$$\Delta EXR_t = \beta_0 + \sum \beta_{1i}\Delta EXR_{t-i} + \sum \beta_{2i}\Delta GDP_{t-i} + \sum \beta_{3i}\Delta INF_{t-i} + \sum \beta_{4i}\Delta DR_{t-i} + \sum \beta_{5i}\Delta GCF_{t-i} + \beta_1 EXR_{t-1} + \beta_2 GDP_{t-1} + \beta_3 INF_{t-1} + \beta_4 DR_{t-1} + \beta_5 GCF_{t-1} + \varepsilon_t \text{.....} \quad \text{Equation (ii)}$$

Here, Δ means the 1st difference of the variables, α_0 denotes the drift component, ε_t is the white noise error term. White noise error term refers to an uncorrelated random error term having zero mean and constant variance, σ^2. The coefficients from 2nd to 7th (α_{1i} to α_{5i}) imply the short-run relationship whereas the coefficients from 8th to 13th ($ь_1$, $ь_2$, $ь_3$, $ь_4$) indicate the long-run relationship.

Now we have to do the bounds testing approach in order to find the long-run relationship among variables. ARDL bounds testing approach is used to explore the long-run relationship among the exchange rates (EXR), Gross Domestic Product (GDP), Inflation (INF), Deposit rates (DR), and Gross Capital Formation (GCF).

The bounds testing approach uses the F statistic to test the hypotheses. This can be expressed as:

$$H_0: \beta_1 = \beta_2 = \beta_3 = \beta_4 = \beta_5 = 0 \text{ (there is no cointegration)}$$

$$H_1: \beta_1 \neq \beta_2 \neq \beta_3 \neq \beta_4 \neq \beta_5 \neq 0 \text{ (there is cointegration)}$$

In the ARDL bounds testing procedure, two critical values have been determined with the help of-E-Views to test the null hypothesis against the alternative one. The null hypothesis is rejected in case of a calculated ***F*** statistic being greater than the upper bound critical value. If the calculated ***F*** statistic falls below the lower bound critical value, then the null hypothesis cannot be rejected. If the F statistic stays between the lower and upper bound critical values, then we cannot reach any conclusion. In this model, the long run elasticities are the negative coefficient of one-lagged repressors divided by the coefficient of the one-lagged dependent variable.

After running a long-run bound test we have to run an Error Correction model (ECM) in order to check errors. The ECM version of ARDL model can be expressed as follows:

$$\Delta EXR_t = \beta_0 + \sum \beta_{1i}\Delta EXR_{t-i} + \sum \beta_{2i}\Delta GDP_{t-i} + \sum \beta_{3i}\Delta INF_{t-i} + \sum \beta_{4i}\Delta DR_{t-i} + \sum \beta_{5i}\Delta GCF_{t-i} + \beta EC_{t-1} + \varepsilon_t \text{ .....Equation (iii)}$$

Here, **β** = The speed of adjustment EC = The residuals obtained from equation.

Now, we have to make sure all the assumptions of the ARDL model are fulfilled. The other assumptions of ARDL model are:

- There should be no serial correlation among the error terms.
- There should be no heteroscedasticity in the dataset.
- The dataset should exhibit normal distribution.

Diagnostic tests have been conducted to look into the assumptions regarding the normal distribution, the serial correlation, and the heteroscedasticity along with the validity of model specification, and

the stability of long-run coefficients. For diagnostic tests we have conducted Normality tests using Jarque-Bera Statistic, Breusch-Godfrey serial correlation LM test using F-statistic and Breusch-Pagan-Godfrey heteroskedasticity test using F-statistic with the help of EV views.

Hypothesis of normality test:

H_0: The residuals are normally distributed

H_1: The residuals are not normally distributed

Hypothesis of Breusch-Godfrey serial correlation LM test:

H_0: No serial correlation present between the residuals.

H_1: Serial correlation present between the residuals.

Hypothesis of Breusch-Pagan-Godfrey heteroskedasticity test:

H_0: The variance of residuals is constant

H_1: The variance of residuals is not constant

We have compared corresponding ***P*** values at various significance levels at 1%, 5% and 10%

Respectively and ensure that the null hypothesis cannot be rejected in all of these in order to fulfill the assumptions of ARDL respectively.

4. Data and Variable Selection

We have collected time series data from 1990 to 2021, all the data for the variables EXR, GDP, INF and GCF have been collected from the website of World Bank. In order to conduct the econometric analysis E-Views has been used.

4.1 Dependent Variable

Exchange Rate (USD/BD) (EXR): The exchange rate is the rate at which one nation's currency can be converted to another nation's currency. Here, the comparison is happening between the US dollar and Bangladeshi taka.

4.2. Independent Variables

Inflation (IFR): Inflation is the continuous increase in price level in the general price level of goods and services in an economy over a given period of time. Bristy (2017) & Chowdhury and Hossain (2014) have used it as an important determinant.

Gross Domestic Product (GDP): The sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products (Bristy, 2017). It has also been considered an important macroeconomic determinant in the works of Chowdhury and Hossain (2014). Finally, it was used by Mirchandani (2013) & Venkatesan and Ponnamma (2017) to carry out the analysis of macroeconomic factors affecting the exchange rate of India.

Deposit Rate (DR): It refers to the amount of money paid out in interest by a bank or financial institution on cash deposits Bristy (2017).

Gross Capital Formation (GCF): Consists of outlays in additions to the fixed assets of the economy plus net changes in the level of inventories Bristy (2017). It has also been considered as an important factor of the exchange rate of Turkey by Kilicarslan (2018).

5. Results and Discussions

Table 01 shows the results of ADF tests in order to see if all the variables are

integrated at level or first difference. The results will be unreliable if any variable is stationary at level or first difference. That's why ADF has been carried out to confirm that all variables are stationary at level or first difference.

Table 01: Results of ADF Test

Variables	ADF	
	Trend and Intercept	
	Level	First Difference
EXR	-1.74	-4.11**
GDP	1.73	-4.17**
INF	-4.10**	-7.33**
DR	-4.35***	-4.99***
GCF	1.25	-4.16**

Source: Authors

The results show that all the variables are stationary at level or first difference respectively. As a result, we can apply the ARDL model with EXR as a dependent variable and GDP, INF, DR and CAB as dependent variables. All the other variables have been discarded.

Table 2 in the following shows the basic representation of the selected ARDL model.

Table 02: Basic Representation of the Selected ARDL Model

Dependent Variable: EXR

Method: ARDL

Date: 10/14/22 Time: 23:55

Sample (adjusted): 1994 2021

Included observations: 28 after adjustments

Maximum dependent lags: 4 (Automatic selection)

Model selection method: Akaike info criterion (AIC)

Dynamic regressors (4 lags, automatic): GDP INF DR GCF

Fixed repressors: C

Number of models evaluated: 2500

Selected Model: ARDL(4, 3, 4, 3, 4)

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
EXR(-1)	0.209503	0.139947	1.497016	0.1946
EXR(-2)	0.249118	0.233629	1.066299	0.3350
EXR(-3)	0.018281	0.213006	0.085826	0.9349
EXR(-4)	0.388678	0.260615	1.491390	0.1961
GDP	-1.35E-09	2.14E-10	-6.336602	0.0014
GDP(-1)	6.39E-10	1.65E-10	3.866308	0.0118
GDP(-2)	7.51E-10	4.87E-10	1.542792	0.1835
GDP(-3)	6.44E-10	4.38E-10	1.469896	0.2015
INF	-0.216017	0.129425	-1.669053	0.1560
INF(-1)	0.159298	0.129128	1.233645	0.2722
INF(-2)	0.004937	0.104264	0.047352	0.9641
INF(-3)	0.256509	0.097416	2.633137	0.0464
INF(-4)	0.256238	0.101144	2.533399	0.0523
DR	-1.055240	0.639239	-1.650774	0.1597
DR(-1)	0.054286	0.377604	0.143765	0.8913
DR(-2)	-0.252087	0.339416	-0.742707	0.4911
DR(-3)	-0.749521	0.323232	-2.318833	0.0682
GCF	3.69E-09	6.59E-10	5.602156	0.0025
GCF(-1)	-2.21E-09	5.14E-10	-4.287700	0.0078
GCF(-2)	-2.50E-09	1.38E-09	-1.807714	0.1305
GCF(-3)	-1.74E-09	1.24E-09	-1.404939	0.2190
GCF(-4)	1.15E-09	1.47E-10	7.851687	0.0005
C	13.71889	3.431708	3.997687	0.0103

R-squared	0.999629	Mean dependent var	65.77056
Adjusted R-squared	0.997996	S.D. dependent var	14.95379
S.E. of regression	0.669368	Akaike info criterion	1.955125
Sum squared resid	2.240267	Schwarz criterion	3.049436
Log likelihood	-4.371748	Hannan-Quinn criter.	2.289667
F-statistic	612.2833	Durbin-Watson stat	3.241401
Prob(F-statistic)	0.000000		

Source: Authors

Table 03 shows the results of the ARDL model based on equation (2). By automatic selection, the lag length of both dependent variable and repressors expandable up to 22 lags. The model that has been selected is ARDL (4,3,4,3,4) which includes both short-run and long-run dynamics.

Table 03: ARDL Model Based on Bounds Testing Approach

ARDL Long Run Form and Bounds Test

Dependent Variable: D(EXR)

Selected Model: ARDL(4, 3, 4, 3, 4)

Case 2: Restricted Constant and No Trend

Date: 10/14/22 Time: 23:57

Sample: 1990 2021

Included observations: 28

Conditional Error Correction Regression

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	13.71889	3.431708	3.997687	0.0103
EXR(-1)*	-0.134419	0.117133	-1.147579	0.3031
GDP(-1)	6.81E-10	7.57E-10	0.898981	0.4099

INF(-1)	0.460964	0.302756	1.522557	0.1884
DR(-1)	-2.002561	1.111290	-1.802014	0.1314
GCF(-1)	-1.60E-09	2.24E-09	-0.716021	0.5060
D(EXR(-1))	-0.656078	0.158246	-4.145926	0.0089
D(EXR(-2))	-0.406959	0.223800	-1.818410	0.1287
D(EXR(-3))	-0.388678	0.260615	-1.491390	0.1961
D(GDP)	-1.35E-09	2.14E-10	-6.336602	0.0014
D(GDP(-1))	-1.39E-09	6.28E-10	-2.221212	0.0770
D(GDP(-2))	-6.44E-10	4.38E-10	-1.469896	0.2015
D(INF)	-0.216017	0.129425	-1.669053	0.1560
D(INF(-1))	-0.517683	0.199140	-2.599594	0.0483
D(INF(-2))	-0.512746	0.137084	-3.740381	0.0134
D(INF(-3))	-0.256238	0.101144	-2.533399	0.0523
D(DR)	-1.055240	0.639239	-1.650774	0.1597
D(DR(-1))	1.001608	0.410816	2.438096	0.0588
D(DR(-2))	0.749521	0.323232	2.318833	0.0682
D(GCF)	3.69E-09	6.59E-10	5.602156	0.0025
D(GCF(-1))	3.09E-09	1.65E-09	1.874719	0.1197
D(GCF(-2))	5.89E-10	1.19E-09	0.495430	0.6413
D(GCF(-3))	-1.15E-09	1.47E-10	-7.851687	0.0005

Source: Authors

Table 04 contains the results of the F-bounds test. The F-statistic is 22.35546 which is greater than 1% of significance level at 4.37. As a result, the null hypothesis can be rejected and a long-run relationship exists among the variables.

Table 04: ARDL Bound Tests Results

F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)
			Asymptotic: n=1000	
F-statistic	22.35546	10%	2.2	3.09
k	4	5%	2.56	3.49
		2.5%	2.88	3.87
		1%	3.29	4.37

Source: Authors

Table 05 shows the results of the ECM version of the ARDL model. ECT_{t-1} has a negative sign and is significant at 1% level of significance. We can see it indicates that GDP, INF, DR and GCF have a long-run association

Table 05: Error correction representation of the selected ARDL model

ARDL Error Correction Regression

Dependent Variable: D(EXR)

Selected Model: ARDL(4, 3, 4, 3, 4)

Case 2: Restricted Constant and No Trend

Date: 10/14/22 Time: 23:58

Sample: 1990 2021

Included observations: 28

ECM Regression

Case 2: Restricted Constant and No Trend

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(EXR(-1))	-0.656078	0.090265	-7.268361	0.0008
D(EXR(-2))	-0.406959	0.087683	-4.641278	0.0056
D(EXR(-3))	-0.388678	0.064458	-6.029914	0.0018
D(GDP)	-1.35E-09	9.68E-11	-13.98123	0.0000
D(GDP(-1))	-1.39E-09	1.10E-10	-12.72383	0.0001
D(GDP(-2))	-6.44E-10	1.57E-10	-4.095599	0.0094
D(INF)	-0.216017	0.048887	-4.418736	0.0069
D(INF(-1))	-0.517683	0.075008	-6.901698	0.0010
D(INF(-2))	-0.512746	0.060956	-8.411714	0.0004
D(INF(-3))	-0.256238	0.057222	-4.477997	0.0065
D(DR)	-1.055240	0.140074	-7.533444	0.0007
D(DR(-1))	1.001608	0.155603	6.436939	0.0013
D(DR(-2))	0.749521	0.138466	5.413050	0.0029
D(GCF)	3.69E-09	2.97E-10	12.44603	0.0001
D(GCF(-1))	3.09E-09	2.61E-10	11.82912	0.0001
D(GCF(-2))	5.89E-10	3.99E-10	1.475910	0.2000

D(GCF(-3))	-1.15E-09	9.30E-11	-12.38571	0.0001
CointEq(-1)*	-0.134419	0.008207	-16.37881	0.0000
R-squared	0.982730	Mean dependent var		1.625589
Adjusted R-squared	0.953370	S.D. dependent var		2.191875
S.E. of regression	0.473315	Akaike info criterion		1.597982
Sum squared resid	2.240267	Schwarz criterion		2.454399
Log likelihood	-4.371748	Hannan-Quinn criter.		1.859797
Durbin-Watson stat	3.241401			

Source: Authors

ECT_{t-1} states that almost 13% of the disequilibrium in exchange rates is adjusted yearly to get back to the long-run equilibrium. That means that nearly 8 years, on average, is required to reach the long-run equilibrium.

Table 06 demonstrates the long-run coefficients of the indicators at level using the ARDL approach. We can see that the relationship of GDP and INF with EXR is positive and the relationship of DR and GCF with EXR is negative. Between them, GDP is significant at 5% significance and positively related with EXR. DR is also significant at 5% significance level but it is negatively related to GDP.

Table 06: Estimated Long-run Coefficients at level Using the ARDL Bounds Testing Approach

Levels Equation

Case 2: Restricted Constant and No Trend

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GDP	5.06E-09	1.95E-09	2.601759	0.0481
INF	3.429304	4.442094	0.772002	0.4750
DR	-14.89789	5.482896	-2.717158	0.0419
GCF	-1.19E-08	7.52E-09	-1.585398	0.1737
C	102.0606	68.45293	1.490960	0.1962
EC = EXR - (0.0000*GDP + 3.4293*INF -14.8979*DR -0.0000*GCF +				
102.0606)				

Source: Authors

However, we can see that, in the coefficient of GDP and GCF is 0, implying that they might not have a significant effect on exchange rate. The greatest negative effect that we can conclude from our model is from deposit rates, this effect might have

taken place due to the fact that if banks keep increasing interest rates then the people will reduce their consumption which includes foreign goods and increase their savings. If consumption of goods imported from abroad decreases, it is responsible for the decrease of overall imports of the country resulting in reduction of exchange rate.

Despite not being significant, the greatest positive effect that can be presented from our model is from inflation. This may have happened due to the decreasing purchasing power of money, resulting in the increase in the overall goods including foreign goods imported from abroad which shows the exchange rates increase.

In Table 07, the results of the diagnostic tests have been shown.

Table 07: Diagnostic Tests

Diagnostic Tests	Statistic	Corresponding Value	Corresponding P value
Normality Test	Jarque-Bera	1.277262	0.528015
Breusch-Godfrey serial correlation LM test	F-statistic	2.635174	0.1068
Breusch-Pagan-Godfrey heteroskedasticity test	F-statistic	0.692883	0.7179

Source: Authors

Here we can see that the JB statistic is not statistically significant. It confirms that the residuals are normally distributed. The result of the LM test of serial correlation suggests that the null hypothesis of no serial correlation in the residuals cannot be rejected. So, there is no autocorrelation in the residuals. The heteroscedasticity test shows that the F-statistic is not statistically significant. So, we cannot reject the null hypothesis and can state the residuals are homoscedastic.

The graphical representation in Figure 01 shows that the parameters are stable as both CUSUM and CUSUMSQ does not cross the upper bounds and lower bounds at 5% significance level ensuring that the coefficients are stable.

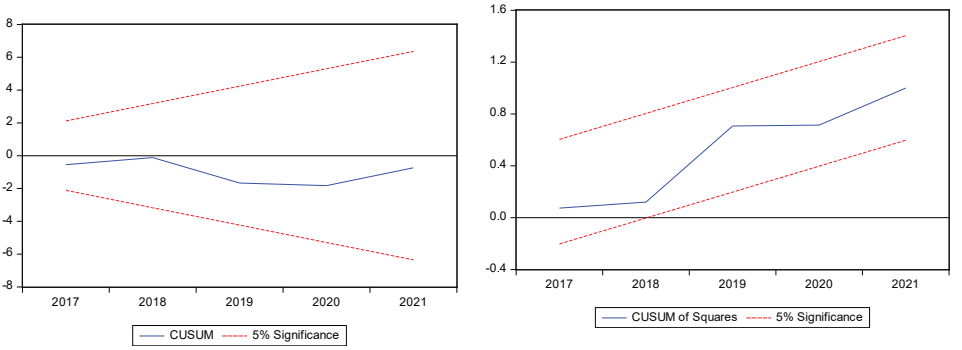

Figure 01: CUSUM and CUSUMSQ Test for the Stability of Long-run Coefficients

Table 08 shows the results of the pairwise Granger causality test. There exists a unidirectional causality from EXR to DR. A bidirectional causality between GDP and GCF has been found.

Table 08: The Results of Pairwise Granger Causality Tests

Null Hypothesis	F-statistic	Prob.	Granger Causality
GDP ⇏ EXR	0.50174	0.6114	No causality
EXR ⇏ GDP	2.07496	0.1467	
INF ⇏ EXR	1.73197	0.1975	No causality
EXR ⇏ EXR	0.92978	0.4079	
DR ⇏ EXR	0.99691	0.3832	Unidirectional
EXR ⇏ DR	3.67660	0.0398	
GCF ⇏ EXR	0.51600	0.6031	No causality
EXR ⇏ GCF	1.55085	0.2318	
GCF ⇏ DR	2.11314	0.1419	No causality
DR ⇏ GCF	0.67023	0.5205	
GDP ⇏ DR	1.79042	0.1876	No causality
DR ⇏ GDP	0.71678	0.4981	
INF ⇏ DR	1.35284	0.2768	No causality
DR ⇏ INF	1.22705	0.3102	
GDP ⇏ GCF	7.93611	0.0021	Bidirectional causality
GCF ⇏ GDP	5.60349	0.0098	
INF ⇏ GCF	0.18771	0.8300	No causality
GCF ⇏ INF	0.00510	0.9949	
INF ⇏ GDP	0.18987	0.8282	No causality
GDP ⇏ INF	0.00745	0.9926	

Source: Authors

The results also suggest that there is no cause-effect between the rest of the variables.

6. Conclusion

We have found that the most important determinant of the exchange rate in our model is deposit rates. It plays a significant role in bringing down the exchange rate of BDT in comparison to USD. So, during this period where the value of BDT is going down day by day compared to BDT, carefully controlling and monitoring deposit rates may play a significant role in stabilizing the exchange rate. A renewed focus by the central bank on monetary policies responsible for controlling and

monitoring may prove beneficial for the rapidly growing international trade of the country in the long run.

Despite efforts to stabilize the exchange rate, fluctuation of exchange rate and its impact is unavoidable for a country who has adopted a floating exchange rate system recently. Developing countries like Bangladesh are most vulnerable to the unpredictable fluctuation of the exchange rate. As a result, it is extremely important to identify which factors are responsible for determining the exchange rate of Bangladesh so that they can be controlled and monitored as much as possible to minimize the damages caused by exchange rate fluctuations. It should be remembered that it is not possible for a single study to identify and explain all the factors behind the exchange rate. Further research should be carried out in more detail in order to understand why particular factors are more or less influential for Bangladesh and what else can have impact on the exchange rate.

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Conceptualization, Islam, Md. S.; methodology, Islam, Md. S. and Imtiaz, Md. F., validation, Islam, Md. S. and Imtiaz, Md. F., formal analysis, Imtiaz, Md. F.,

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