The Transition of Exchange Rate Regime and its Effect on Economic Indicators: Bangladesh Perspective

Md Saddam Hossain Khan
Lecturer of Finance
Bangladesh Army International University of Science & Technology
Comilla Cantonment
m.saddam@baiust.edu.bd

Afsana Tajnin
Lecturer of Management
Bangladesh University
afsanaru104@gmail.com

Abstract

Which forms of the Exchange rate is beneficial for an economy? It has been a burning question since the inception of international trade. Bangladesh is a developing country having experienced two forms of exchange rate regimes; one is Adjustable pegged system (until 2003) and another is freely floating system (from 2003 till now). Based on secondary data the study has tried to determine the impact of the transition of exchange rate regime based on the change in economic indicators like export, foreign reserve, and remittance. Statistical analyses like regression and correlation have been used to determine the impact of changes in the exchange rate regime on three economic indicators. Because of the change in exchange rate regime, a significant improvement in export, foreign reserve, and workers' remittance have been identified.

Keywords: Exchange Rate, Regime, Exports, Remittance, Reserve.

1.0 Introduction

It is not optimal to produce everything within the national border. As a result of depression in the 17th century, trade shifted its direction from the national economy to an economy with foreign trade surplus (Korkmaz, 2013). Depending on the availability of resources and factors of production, some products or services are considered advantageous to produce for some countries. In order to satisfy the demands of every section of the world, the concept of Export and Import have emerged. Countries export products that have a competitive edge in producing, on the other hand, countries imports products which they don't have any competitive edge in producing. As money is used as the medium of exchange, to

maintain the balance among the countries, exchange rate concept has been introduced. Deriving the value of a country's currency by using another currency is a crucial factor in determining the original value of a currency.

Bangladesh had been following Adjustable pegged system from 1973 to 2003. The country adopted a free-floating system of the Exchange rate from the 30th May 2003. There has been a significant change in different economic indicators since the inception of the Floating exchange rate. For example, the total budget of Bangladesh back at 2003-04 was BDT 519.80 billion which is BDT 5231.90 billion today along with a huge GDP growth rate of 8.2%. A major change in the economy has started from the introduction of the floating exchange rate back in 2003 (Daily Star, 2019).

According to the Foreign Exchange Regulation Act 1947, Bangladesh Bank, the regulatory body of foreign exchange, has conducted the transition. After the transition, a lot of positive impacts have been watchable on most of the economic indicators.

Apart from that, some authors state that the Foreign Exchange Rate regime is considered as a determinant factor for the financial crisis in different time periods. By maintaining control on tradable price and inflationary desires, a fixed exchange rate would gradually sort the gap between domestic and standard inflation rate(Edwards et.all, 2003).

The main objective of the study is to compare the condition of the economy at fixed and floating exchange rate regimes of Bangladesh.

It will also depict the responsiveness of change in economic variables (Export, Foreign Reserve, and Remittance) with the change in exchange rate.

Exchange rate determines a country's position in the world. So it is one of the most urgent issues that need to be addressed with different dimensions. For this recurring importance this literature has been conducted.

Factors like Government debt with foreign countries, Diplomatic relation with foreign countries and Political Stability haven't been considered in this literature which also play a very vital role in improving the development indicators of the economy. So this could be considered as a gap or limitation of the literature.

2. Literature Review

Bangladesh transited from adjustable pegged system to a freely floating regime at 30th May 2003. A fixed exchange rate is the constant rate which will not change subject to the change in foreign exchange reserve (Guellie,et.all, 2017). At the very beginning, the transition was smooth but after one year that means at the time from 2003 to 2004, about 1% depreciation had been experienced by the currency of Bangladesh (Hossain & Ahmed, 2009). But after that, some periodic intermediation in the foreign exchange market bring out some positive advantages, especially for creating nations like Bangladesh if the arbitration is focused to accomplish some monetary goals, for example, stable expansion or exchange intensity (Guellie et al., 2017).

Under the fixed pegged system the currency fluctuation doesn't keep pace with the international fluctuation of currencies which ensures a comparatively stable business environment between countries (Bastourre, 2004). On the other hand the main disadvantage of fixed exchange rate is that it places a hinder on implementation of open monetary policy along with liberal capital market (Korkmaz, 2013). Thirwall (2009) stated that capital outflows creates depreciation of currencies which creates a situation where government increase the internal rate of interest to hedge the situation which eventually creates hazard for domestic economy and vice versa would take place when cash inflows occur. So to ensure stability in domestic and external equilibrium floating exchange plays a vital role (Jakob, 2015).

Floating Exchange rate has the capacity to change the price level and by the way it would change the distribution of income (Eichengreen 2012). Under this system a rate is determined by the interaction between demand and supply and automatically adjusts the balance of payment by depreciation and appreciation of the corresponding currencies (Petreski, 2010). If the currency appreciates then under this system export will not grow more but if the currency depreciates then it will create a high flow of inflation which would decrease the purchasing power of individuals (Bastourre, 2004).

The values of economic indicators represent variety of factors which includes not only the Exchange rate system applied but also some other factors related to society, politics and culture(Mills & Wood, 2018). But lot of literatures showed a positive impact of exchange rate regime on economic development indicators (Jakob, 2015). Floating exchange rate has got a direct influence on adjusting the shock and positivity of the concurrent situation rather than fixed exchange rate (Gbatu, Wang, Jr, Yak, & Tutdel, 2017).

Ahmed and Uddin (2015) described that increase in exports can directly increase the employment and profitability of a country. Whereas Edward (1986)

depicted that a weak form of currency got a positive impact in promoting export of a country. Rizzo (1995) explained the positive correlation between a higher exchange rate and poorer conditions of importing country whereas lower exchange rate and a better condition of exporting countries. Rosengren (2005) declared a direct relation of economic growth and exchange rate regime. Kendal (2004) showed a positive impact in the real output because of a depreciated currency. Eric (1992) found out a direct correlation between foreign direct investment and real exchange rate USA.

Agenor (1991) and Montel (1997) reviewed a positive impact in economy of Bangladesh because of a transition in Exchange rate regime as of transition, the country has got significant changes in foreign reserve, exports, current account balances and workers' remittances. Arizonan (1992) described that economic shock could have a disastrous impact on economy; on the other hand inward foreign direct investment could be facilitated at the time of fixed exchange rate.

Levy Yutri (2010) stated that there has been very few research on exchange rate regime and macroeconomic performance as some of the literature shows a negligence in considering nominal variables for determination of long term growth.

Many works of the literature showed a positive impact on economic indicators based on the change in exchange rate regime but some of the research proved the concept wrong that means that literature shows no relation of change in exchange rate regime and positive or negative change in economic indicators (Stockman, 1988). In recent times countries have experienced financial shock and then adopted a specific regime but after the shocks been overcome then countries revert back to the previous regime (Guellie, Marou, and Benbouzine, 2017).

While Hossain (2002) stated that the response of inflation with the fixed exchange rate was too low in Bangladesh. Hossiain (1997) depicted that not the change in exchange rate regime but the overflow of remittances from other countries and help from countries or foreign direct investment tend to raise the economic indicator. Exchange rate pegs have regularly been joined by a boom in bank lending, which in turn has energized a boom in utilization spending(Islam, 100AD).

3. Hypotheses and Methods

This is a quantitative research and the main objective of the research is to determine the impact of the transition of exchange rate regime based on the change in economic indicators like exports, foreign reserve, and remittance. The secondary data of considered economic indicators from 1996 to 2019 have been collected from open sources like websites of Bangladesh Bank, Bangladesh Bureau of Statistics and Export Promotion Bureau to conduct the research. Regression and correlation have been conducted to determine the impact of change in exchange rate regime on Exports, Foreign Reserve and workers Remittance. Data from 1994 to 1996 have been used to calculate the correlation. Three separate regression analyses have also conducted between Exchange rate and export, Exchange rate and foreign reserve, Exchange rate and Remittance. To determine the effect of Exchange rate regime some other time series data of GDP, Inflation, Current account balance, have been used.

Economic indicators have represented two different directions under two separate exchange rate regimes of Bangladesh. The main objective of this study to evaluate the impact of changes in exchange rate regime on economic indicators like Export, Foreign Reserve and Foreign Remittances. To determine the intensity of changes in economic indicators due to the changes in the exchange rate regime, three separate regression models have been developed. This Y= b1+ b2X regression model has been developed and used separately for three times in this to accomplish the above stated goal as this model has already been used in the study of Mercado, & Bautista, (2015). The first model is between Export (Dependent Variable) (Hossain & Ahmed, 2009) and Foreign Exchange rate (Independent Variable) (Hossain & Ahmed, 2009) where H0=No Relationship between Export and Foreign Exchange rate and H1=Significant Relationship between Export and Foreign Exchange rate. The Second model is between Remittances (Dependent Variable) (Korkmaz, 2013) and Foreign Exchange rate (Independent Variable) (Korkmaz, 2013) rate where H0=No Relationship between Remittances and Foreign Exchange rate and H1=Significant Relationship between Remittances and Foreign Exchange rate. The third model is between Foreign Exchange Reserve (Dependent Variable) (Hossain & Ahmed, 2009) and Foreign Exchange Rate (Independent Variable) (Hossain & Ahmed, 2009) where H0=No Relationship between Foreign Exchange Reserve and Foreign Exchange Rate and H1=Significant Relationship between Foreign Exchange Reserve and Foreign Exchange Rate.

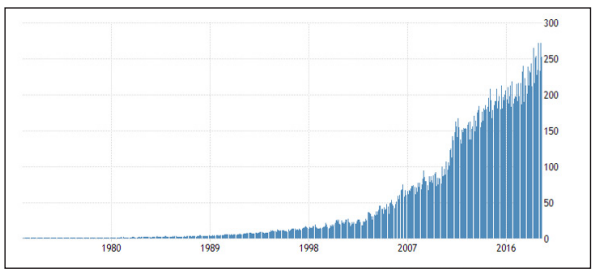
4. Analysis and Findings

Effects of the transition of Exchange Rate on Economic Indicators:

Exports:

Exports have been increasing rapidly since the implication of floating exchange rate back in 2003. The total amount of export is less than $50 million at the year or before 2003 but after 2003 the total amount of exports have gradually increased and after some years that increase became so rapid for example we can say from the year 2007 to 2016 the increase of export was more than 50%.

Figure: 01 Total Price of Exports in US $(Million)

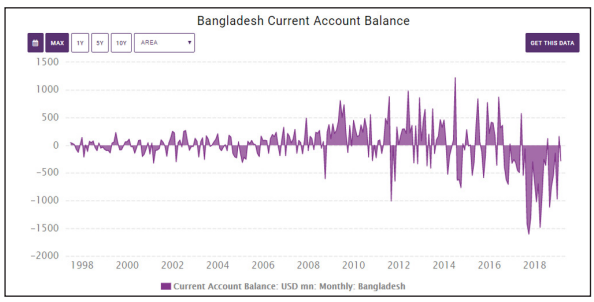


Source: Bangladesh Bank

Current Account Balance:

Current account balance has experienced its most positive situation ever in the history of Bangladesh after the inception of the new foreign exchange rate determination system. After the implication of floating exchange rate, Bangladesh faced a little hazard as the currency depreciates a little at the year 2004. But after that, it took only two or three years to make the market much more stable. After that, the country had experienced a positive situation except for the time of the world economic crisis in 2009.

Figure 02: Bangladesh Current Account Balance (USD MN)

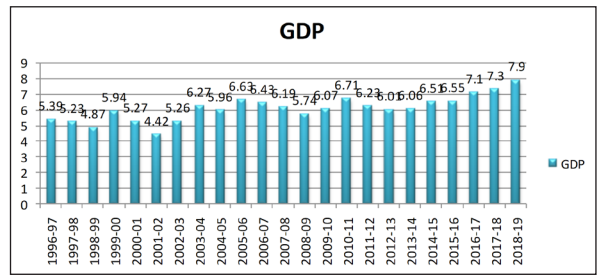


Source: Bangladesh Bank

GDP (Gross Domestic Product):

Bangladesh also experienced a positive and constantly growing GDP after the introduction of a floating exchange rate. Just after the implementation in 2003, GDP increased from 4.42% to 5.26 %. Just after one year it has experienced a huge increase in Gross Domestic Product from 5.26% to 6.27%. And now the expected growth rate is 7.9%.

Figure: 03 GDP Growth Rate from 1996-97 to 2018-19

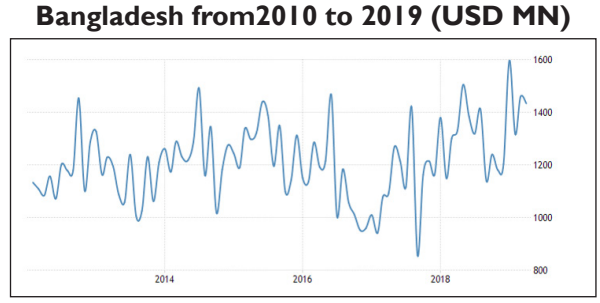


Source: Bangladesh Bureau of statistics

Worker's Remittance:

After the inception of the floating exchange rate, Bangladesh has experienced a substantial rise in worker remittance increase. Back in 2003, it was less than $800mn but now, in 2019, it has raised an amount which is almost double than the amount of 2008.

Figure 04: Worker's Remittances in Bangladesh from2010 to 2019 (USD MN)

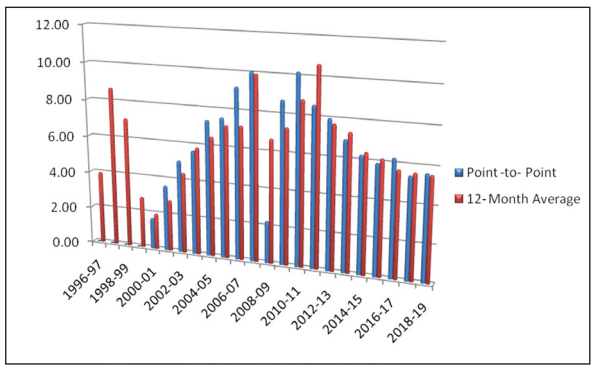


Source: Bangladesh Bank

Inflation:

Maintaining moderate inflation is essential for most of the countries. Before 2003, the inflation rate was not stable but after the year 2003, Bangladesh has gained a little stability in inflation except the years of world financial crisis. A notable fact is that Bangladesh has experienced a rise of inflation right after the world financial crisis which was a direct byproduct of adoption of freely floating exchange rate.

Figure 05: Point to Point and 12 Month average inflation from 1996-97 to 2018-19

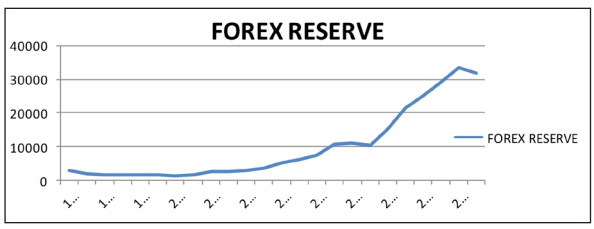


Source: Bangladesh Bureau of Statistics

Foreign Exchange Reserve:

It has been quite some years, Bangladesh is experiencing a consistently increasing foreign exchange Reserve. In recent years it has broken all the previous records. But after the impletion of floating exchange rate, it started to rise along with the number of workers from Bangladesh across the world.

Figure: 06 Foreign Exchange Reserve (USD MN)



Source: Bangladesh Bureau of statistics

Correlation among the variables which have been taken under consideration:

The correlations among the variables which have been taken under consideration to determine the relationship with exchange rate are quite significant in nature.The matrix has been retrieved by using the data from 1994 to 2019.

	Export	Remittance	Reserve
Export	1		
Remittance	0.97776572	1	
Reserve	0.94322214	0.910014564	1

From above correlation matrix, a significant (0.97) relationship can be drawn between Export and Remittance, On the other hand, a significant relationship (0.94) between Export and reserve has also been depicted where the relationship (0.91) between Reserve and Remittance is also significant.

Regression Analysis of the considered variables taken under considerations:

Regression between Exchange rate and Export:

Coefficient of Intercept	-27836.90142534
Coefficient of Exchange Rate	723.34512673214
P-Value	0.000002451023
R Square value	0.80772341
Adjusted R Square	0.78332131
F value	65.346782319
T Stat	-4.231509786123

Regression line between Exchange rate and Export: Y (Export) =-27836.90142534+723.34512673214 Exchange rate

From the above table, it is shown that the Value of R square is 0.80 which is so close to 1. It represents a very good fit of data for the conducted research as 80.77% variation of the independent variable or predictor variable (Exchange Rate) can be explained by outcome variable or dependent variable which is Export. P Value represents the validity of the literature depending on the benchmark of 0.05. In the above matrix, the p-value is much lower than 0.05 ,which represents a great fit of data for the conducted research. So it is obvious to state that Export has a significant relationship with the exchange rate.

Regression between Exchange rate and Remittance:

Coefficient of Intercept	-16782.4578216
Coefficient of Exchange Rate	410.7784567
P-Value	0.00
R Square value	0.812468957
Adjusted R Square	0.80112456
F value	88.465879625
T Stat	-5.897564256

Regression line between Exchange rate and Remittance: Y=-16782.4578216+ 410.7784567 Exchange Rate

From the above table, it is shown that the Value of R square is 0.81 which is so close to 1. It represents a very good fit of data for the conducted research as 81.24% variation of the independent variable or predictor variable (Exchange Rate) can be explained by outcome variable or dependent variable which is Remittances. P Value represents the validity of the literature depending on the benchmark of 0.05. In the above matrix, the p-value is much lower than 0.05 which represents a great fit of data for

the conducted research. It is also representing a significant relationship between remittance and exchange rate.

Regression between Exchange rate and Foreign Exchange Reserve:

Coefficient of Intercept	-19562.453672
Coefficient of Exchange Rate	420.23456172
P-Value	0.001234156231
R Square value	0.60241567123
F value	27.245612356
T Stat	-4.123613424

Regression Line between Exchange rate and Foreign Exchange Reserve:

Y=-19562.453672+420.23456172Exchange Rate

From the above table, it is shown that the Value of R square is 0.60 which is close to 1. It represents the moderately good fit of data for the conducted research as 60.24% variation of the independent variable or predictor variable (Foreign Exchange Reserve) can be explained by outcome variable or dependent variable which is Foreign Exchange Reserve. P Value represents the validity of the literature depending on the benchmark of 0.05. In the above matrix, the p-value is much lower than 0.05 which represents a great fit of data for the conducted research. It is also representing a moderately significant relationship between remittance and exchange rate.

5. Recommendations

1. Gradually increasing inflation is one of the consequences of floating exchange rate which would be controlled by controlled monetary policy.
2. Little control should be maintained by government to avoid uncertainties due to floating exchange rate.
3. The government should take steps to prolong the Foreign Direct Investment as it has a significant impact on long term development of a country.
4. Borrowings from foreign countries need to be controlled to avoid the debt trap which is also a consequence of transition from fixed exchange rate to floating exchange rate.

6. Conclusion

A well significant impact of the floating exchange rate has been represented in the study. After the transition from the fixed exchange rate to the floating exchange rate, economic variables like Exports, Workers Remittances, and Foreign Reserve have also shown a gradual positive increase over the period of time. The Study also shows a greater intensity of changes in economic indicators due to the transition of exchange rate regime but the ongoing depreciation of Bangladeshi currency gradually making things complicated to control. A more comprehensive monetary system should be developed to overcome this devaluation of the currency. But apart from all the positive impact, some negative impacts like raise in inflation, negative current account balance are also caused by the adoption of freely floating exchange rate. Factors like Government debt with foreign countries, Diplomatic relation with foreign countries and Political Stability haven't been considered in this literature but these variables also play a very vital role in improving the development indicators of the economy.

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