IMPACT OF EXCHANGE RATE FLUCTUATIONS ON FINANCIAL PERFORMANCE OF STATE-OWNED COMMERCIAL BANKS IN BANGLADESH: AN EMPIRICAL STUDY

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ABSTRACT: The study aimed at investigating the effects of exchange rate fluctuations on financial performance of financial institutions in Bangladesh. The study reviewed theoretical and empirical studies on exchange rate and financial performance. Secondary data was collected from the banks’ consolidated financial statements as well as World Bank database website. The study is carried out by using the measures of central tendency as descriptive statistics to describe the data. This study also adopted correlation analysis to explain the association between Return on Assets (ROA), inflation rates, interest rates spread, and exchange rates. A multiple linear regression model has been employed. Return on assets was the dependent variables and exchange fluctuations variables as the independent variables. The study found that exchange rate fluctuations and financial performance had a weak negative association. The study observed that the inflation rates have been increasing yearly over the entire study period. The relationship however between inflation and returns on assets was positive and hence it positively impacted performance. The study demonstrated that interest rates especially lending rates have been increasing over time whereas the same observation was not eminent in deposit rates by banks. The results of the study therefore concludes that the interest rates spread has been increasing in the recent years since borrowing had become expensive thus profitable whereas deposits rates were very small. The Central Bank of Bangladesh should adequately put measures to safeguard the value of the domestic currency.

Keywords: Return on Assets, Interest Rate Spread, Exchange Rate, Purchasing Power Parity, Correlation, Regression, Analysis of Variance (ANOVA).

1. INTRODUCTION

In the present challenging era international market play vital role and in an international trade involve different currencies; the variability of foreign exchange rates is a potentially interesting factor that drives the level of profitability of commercial banks as it affects their financial intermediation process (Chiira, 2009). Because there is no country that is self-reliant but instead, they all transact business with one another, foreign exchange rates become handy. Adetayo et al. (2004) explain that exchange rate variation is significant in determining a country’s balance of trade. Berger and Bouwman (2010) establish that exchange rates like any other commodity have demand side and supply side. Supply of currencies is explained by changes in fiscal policies whereas currency demand in influenced by a wide range of factors such as inflation rates and interest rates (Brunnermeier and Lasse, 2009).

This study was anchored on purchasing power parity theory and international Fishers effect theory. Purchasing power parity (PPP) theory explains that the value of homogenous goods is similar in different countries based on the currency of each country. This theory is based on the assumptions that there are no transactional costs, no barriers to trade and the commodities being traded are homogeneous. (Ross et al., 2008) posits that a country’s currency may be incorrectly valued whereby money has no purchasing power against the country’s commodities level. The international fisher effect theory explains that differences in returns equal inflation rate differences between to give countries. The theory holds that a strategy to borrow from one country and invest in another country should not provide positive returns as exchange rates adjust to offset differences in interest rate (Ubindi, 2006). Levels of exchange rate fluctuations in Bangladesh have gone high thus forcing Bangladesh Bank to intervene to ensure stability.
This has greatly affected the performance of financial institutions as they seek to provide adequate currency to promote international business.

2. REVIEW OF LITERATURE

The study was based on Purchasing Power Parity Theory and the International Fischer Theory.

2.1. The Purchasing Power Parity (PPP) Theory

Advanced by Menon and Viswanathan (2005) PPP theory explains that the value of homogenous goods is similar in different countries based on the currency of each country. According to them, when purchasing power is similar in different countries then the exchange rates between the country’s currencies will be at equilibrium. Reid and Joshua (2004) postulated that ratio of commodities price levels should equal the country’s currency. According Ross et al. (2008), a country’s currency may be incorrectly valued whereby money has no purchasing power against the country’s commodities level. This theory is based on the assumptions that there are no transactional costs, no barriers to trade and the commodities being traded are homogeneous

The theory suggested use of price indexes to determine the exact price of a homogenous commodity between countries. The main challenge of this belief is in measuring Purchasing Power Parity constructed from price indexes given that different countries use different goods to determine their price level (Reid and Joshua, 2004).

2.2. The International Fisher Effect

Proponents of the international fisher effect Shapiro (2007) explains that differences in returns equal inflation rate differences between to give countries. According to the theory, nominal risk-free interest rates comprises of anticipated inflation and real rate of return. Ubindi (2006) asserts that differences in interest rates amongst countries are as consequences of expected inflation diverge because investors require the same real return. Staikouras and Wood (2004) show that foreign currencies normally will depreciate if they have relatively higher interest rates. The theory holds that a strategy to borrow from one country and invest in another country should not provide positive returns as exchange rates adjust to offset differences in interest rate (Ubindi, 2006). This theory is limited by the sense that other factors besides inflation influences exchange rate.

2.3. Exchange Rate Fluctuation

Adetayo et al. (2004) explain that exchange rate variation is significant in determining a country’s balance of trade. According to Omagwa (2005), fluctuations in exchange rates impacts on prices of imports directly thus inversely affecting a country’s external sector. Murthy and Sree (2003) postulated that country’s foreign debt is significantly affected by the fluctuations in exchange rates. The central bank typically under a fixed exchange rate system will set a par value between foreign and domestic currencies (Reid and Joshua, 2004).

Bradley and Moles (2002) defined exchange rate as the price of a unit of foreign currency against domestic currency. According to Reid and Joshua (2004), exchange rate is the value of the one unit of foreign currency against local currency. Omagwa (2005) posit that exchange rates like any other commodity are explained by the law of demand and supply. Supply of currency is explained by changes in fiscal policies whereas currency demand in influenced by a wide range of factors such as inflation rates and interest rates. Murthy and Sree (2003) argued that exchange rate enables comparison of prices of commodities quoted in diverse currencies.

2.4. Financial Performance

According to Adetayo et al. (2004), financial performance comprises of achievement measurements of an organization. Financial performances measure an organizations benchmarks and financial objectives. A wide range of measures are used in measuring firm’s financial performance including; profitability measures, liquidity measures and debt measures (Reid and Joshua, 2004).

Bradley and Moles (2002) show that the ultimate goal of any organization is profit maximization therefore, profitability measures are widely used as compared to other measures. Profitability measures comprises of return on equity (ROE), return on asset (ROA) and net interest margin. Khrawish (2011) explain that ROA is significant in explaining bank’s profitability; ratio typically gives an insight on the efficient of a management based on its use of assets. Net Interest Margin explains interest income
generated and interest paid by banks. Return on equity explains shareholders equity against banks’ profitability. Murthy and Sree (2003) define financial performance as the ability to leverage operational and investment decisions and strategies to achieve a business’ financial stability.

2.5. Exchange Rates Fluctuations and Financial Performance of Banks

Exchange rate is most important because Exchange rate fluctuations influence a country’s prices through import prices of consumption and intermediate goods (Wekesa, 2012). According to Mwirigi (2014), the main function of commercial banks is to mediate between supply side and the demand side of the foreign currency, any restrictions on how commercial banks go about their business would affect their financial performance. Exchange rate fluctuation impacts on a country’s prices directly and significantly influences production cost of domestically produced goods. Wekesa (2012) establishes that exchange rates fluctuations typically generate significant gains/losses. Serdaneh and Nimer (2011) documented that the more a company is involved in international trade, the more its accounting exposure and unless a company hedges this risk then it faces financial gains and/or losses from transaction and translation of foreign activities. Another unique dimension of exchange rate exposure is that of projects funded by foreign donors as Kinyuma (2013) investigated. According to Mwirigi (2014), multinational companies’ net income is greatly affected by unrealized foreign exchange gains/losses.

2.6. Profitability Ratio

Measures of profitability enable analysts to evaluate the firm’s profit with respect to a given level of sales, a certain level of assets, or the owner’s investment. ROA and ROE are two widely used ratios to evaluate a bank’s performance. Generally, profitability ratios measure how efficiently a bank uses its assets and capital to generate profit.

2.7. Interest Rate Spread

Interest Rate Spread is the difference between lending rate and interest on deposits. The higher the interest rate spread the higher the profitability

\[
\text{Interest Rate Spread} = (\text{Lending Rates} - \text{Interest rate on deposits})
\]

2.8. Foreign Exchange Rate

Foreign Exchange Rate has substantial impact on bank’s net interest income. Foreign Exchange growth Rate is calculated as follows:

\[
\text{Foreign Exchange growth rate} = \frac{(\text{Current year’s Foreign Exchange Rate} - \text{previous year’s Foreign Exchange Rate})}{\text{Previous year’s Foreign Exchange Rate}} * 100
\]

2.9. Empirical Review

Wong et al. (2008) examined Exposure of foreign exchange of Chinese banks. The study revealed that bank size and foreign exchange exposure positively correlates. The study found that appreciation of foreign exchange minimizes equity values thus hampering bank’s performance.

According to Waheed (2009), a commercial bank might be forced to borrow punitive rates if they hold too little liquidity. High liquidity ratio on the other hand may lead to unprofitable investment activities. Inadequate liquidity may result to bankruptcy. Ubindi (2006) asserted that a trade-off between return and risk must be established in order to determine optimal balance of holding liquid assets. Wamukhoma (2014) found that liquidity positively influences firm’s profitability.


Ahmed et al. (2010) explain that large banks tend to be more efficient than small banks because they are capable of exploiting more economies of scale and scope. Size can be determined by net premium which is the premium earned by a bank after deducting the reinsurance ceded. The premium base of insurers dictates the quantum of policy liabilities to be borne by them Teece (2009).

Kargi (2011) revealed that credit risk management significantly influences financial performance. Tabari et al. (2013) assert high levels of non-performing loans in a bank hinder the institution in attaining its objectives and sometime may lead to bankruptcy.
Hossin (2015) examined the relationship between inflation and economic growth in the context of Bangladesh and found a statistically significant long-run negative association between inflation and economic growth for the country as point out by a statistically significant long-run negative relationship running from Gross Domestic Product Deflator (GDPD) to GDP.

Pitia and Lado (2015) investigated the relationship between exchange rate and inflation in South Sudan. The study revealed that exchange rates did not cause CPI. The study concluded that depreciation currency negatively influences economic growth.

Ebaidalla (2014) examined impacts of real exchange rate misalignment on economic performance in Sudan. The study covered a period from 1979–2009. The study revealed that economic policy significantly affects equilibrium exchange rate.

Rutto and Ondiek (2014) examined the impact of exchange rate volatility on Kenya’s tea exports. The study was carried for a period from 1970–2008. The study concluded that exchange rate volatility negatively influences performance of tea exports.

Hossin and Islam (2019) examined the long-run equilibrium relationship between stock market development and economic growth of Bangladesh. The study demonstrated that a long-run relationship exists between stock market development and economic growth in Bangladesh.

Owoeye and Ogunmakin (2013) investigated effects of exchange rate volatility on performance of commercial banks in Nigeria. The study found an insignificant relationship between exchange rate and capital deposit ratio.

Adetayo J. O. (2013) investigated impacts of foreign exchange risks on commercial banks in Nigeria. Population for the study comprised of all commercial banks situated in Lagos. The study found that spot transaction was an effective in minimizing foreign exchange risk.

Ambunya (2012) investigated relationship between exchange rate fluctuations and stock market returns volatility at the NSE. Population for the study comprised of 56 listed firms. The study found that exchange rate fluctuations positively influence stock market performance.

Hossin (2020) analysed the relationship among interest rate reforms, financial development and economic growth of Bangladesh by using a financial deepening model and a simple trivariate causality model. The inference of this study was that a deregulated deposit rate of interest will raise financial depth and eventually enhance the economic growth of Bangladesh.


Opaluwa et al. (2010) investigated effects of exchange rate fluctuations on the Nigerian manufacturing sector. The study concluded that exchange rate fluctuations negatively affect output of the manufacturing sector.

Cherop (2010) investigated effects of exchange rate fluctuation on tea export earnings among smallholders’ tea factories in Kenya where she established that the exchange rate fluctuations greatly affected the earnings of smallholders at tea factories.

Maina (2010) examined impact of exchange rate variability on investment in the electric power subsector in Kenya. The study found that the investments were high in the power subsector when the exchange rates were stable as compared to times of high fluctuations.

Anifowose et al. (2018) presented empirical test results of Malaysian foreign exchange market microstructure assessment of exchange rate dynamics. The results showed that currency order flow explains an important portion of the movements in the MYR–USD exchange rate.

Bilal and Shahbaz (2019) examines the impact of nominal effective exchange rate on real effective exchange rate in Algeria, using autoregressive distributed lag bounds test approach with monthly time series data from 2008 to 2017. Empirical results suggest that the nominal devaluation leads to real devaluation not only in the long run but also in the short run in Algeria for both devaluations.

3. OBJECTIVES

The broad objective of this study is to investigate the impacts of exchange rate fluctuations on financial performance of commercial banks in Bangladesh. The specific objective of this research is to determine the extent of impact of another variable Interest Rate Spread on the Return on Assets. And also finding out the significance of influencing Inflation on the Return on Assets. In addition, to investigate the interrelationship among the variables of Return on Assets, Exchange Rate Fluctuation, Interest Rate Spread and Inflation.
4. RATIONALE OF THE STUDIES
To the managers of commercial banks in Bangladesh, the findings of this study would provide information to guide their management decisions following the changes in the exchange rate in Bangladesh for a strong banking industry. For the Government of Bangladesh, the findings of this study would inform the formulation of policies and regulations for a strong and resilient banking industry. The findings of this study would inform the fragile foreign currency reserves making it difficult for the banking industry to transact freely.

The study will provide information on impacts of exchange rate fluctuations on financial performance that will benefit academicians and researchers who intend to carry out further research on exchange rate fluctuations and financial performance.

5. METHODOLOGY
The study adopted a descriptive survey. A descriptive survey examines a phenomenon’s profile by establishing it what, where and how (Mugenda and Mugenda, 2003). The descriptive survey was appropriate for this study as it intended to investigate at the effects of exchange rate fluctuations on financial performance of financial institutions in Bangladesh. Secondary data have been used to conduct the research. The study covered the time period of 10 years from 2009-2018. Profitability is measured by return on asset (ROA) taken as dependent variable. The study carried out the measures of central tendency as descriptive statistics to describe the data. The study adopted correlation analysis to explain the association between ROA, inflation rates, interest rates spread, and exchange rates. A multiple linear regression model was employed. Return on asset was the dependent variables and exchange fluctuations variables as the independent variables.

5.1. Population
Target population for the study comprised of all financial institutions operating in Bangladesh as on 31, December, 2019. The study adopted a descriptive survey. Target focused on all financial institutions operating in Bangladesh. All the commercial banks listed in Bangladesh Bank (BB) are the population for this research work.

5.2. Sample Size
Target Sample for this study has been taken State-owned commercial banks as the sample for the research. As the major portion trading of foreign currency in banking industry is covered by the SCBs.

5.3. Sources of Data
The study used secondary data was used for this data. Data was collected from world development indicators of World Bank, the banks’ consolidated financial statements as well as Central Bank of Bangladesh, annual reports of state-owned commercial banks. Secondary data collected included Return on asset for Ten years starting from 2009 -2018 when the Exchange rate started fluctuating. Data on the foreign exchange rate fluctuations was collected for the period 2009 to 2018. Annual data are used.

5.4. Data Analysis
The study adopted correlation analysis to explain the association between ROA, inflation rates, interest rates spread. Statistical Package for the Social Sciences (SPSS), version 22 has been used to analyze the data. Correlation matrix, Regression and ANOVA have been used to test the formed hypothesis. The study carried out the measures of central tendency as descriptive statistics to describe the data.

5.5. Analytical Specification of the Econometric Model
A multiple linear regression model was employed. Return on asset was the dependent variables and exchange rate fluctuations, inflation rate, interest rate spread as independent variables.

The multiple regression model is expressed as:

\[ ROA = \beta_0 + \beta_1 CEX_t + \beta_2 IRS_t + \beta_3 INF_t + \epsilon_t \]

Where: ROA = Return on Assets or bank’s profitability
\( \beta_0 \) = Constant (Y-intercept)
CEX = Foreign exchange Rate fluctuation
IRS= Interest Rate Spread (Lending Rates- Interest rate on deposits)
INF = Inflation (Consumer Price Index)
$\varepsilon$ = Error term

6. ANALYSIS AND DISCUSSION

6.1. Descriptive Statistics

Table 1 reported descriptive statistics of variables used in the Econometric Model. During the study period, ROA had a minimum of -7.99 and a maximum of 7.99. The mean for the returns was 1.54 with a standard deviation of 5.82. The inflation rates had a minimum of 5.42 with 11.40 as the maximum, mean for the rate was 6.86. The high standard deviation value of 1.84 revealed that the inflation rates in Bangladesh have really increased and varied over the years. The interest rate spread had a minimum of 1.87 with a maximum of 5.51. This revealed that the margin in the difference between deposit and lending rates was getting big with time. Exchange rate fluctuations had a -0.68 as the minimum value whereas the maximum fluctuation difference was 12.00. The mean was 2.19 with a meager standard deviation of 3.85. The Bangladesh USD exchange rate was observed to have really increased over time hence the high fluctuations. The study therefore over the period of study was unstable thus implying that the currency over time was depreciating in value.

Table 1. Descriptive statistics of variables used in the Econometric Model

<table>
<thead>
<tr>
<th>Variables</th>
<th>Obs.</th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROA</td>
<td>10</td>
<td>-7.99</td>
<td>7.99</td>
<td>1.54</td>
<td>5.82</td>
</tr>
<tr>
<td>CEX</td>
<td>10</td>
<td>-0.68</td>
<td>12.00</td>
<td>2.19</td>
<td>3.85</td>
</tr>
<tr>
<td>IRS</td>
<td>10</td>
<td>1.87</td>
<td>5.51</td>
<td>3.85</td>
<td>1.05</td>
</tr>
<tr>
<td>INF</td>
<td>10</td>
<td>5.42</td>
<td>11.40</td>
<td>6.86</td>
<td>1.84</td>
</tr>
</tbody>
</table>

Source: Results obtained (SPSS output) by the authors.

6.2. Correlation Analysis

The study conducted a co-relation analysis to depict the extent of the relationship between the study variables.

Table 2. Correlation matrix among variables

<table>
<thead>
<tr>
<th></th>
<th>ROA</th>
<th>CEX</th>
<th>IRS</th>
<th>INF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ROA</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CEX</td>
<td>-.571**</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IRS</td>
<td>.181*</td>
<td>-.024</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>INF</td>
<td>.572*</td>
<td>-.167</td>
<td>.081*</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>ROA</th>
<th>CEX</th>
<th>IRS</th>
<th>INF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sig. (1-tailed)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ROA</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CEX</td>
<td>.042</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IRS</td>
<td>.308</td>
<td>.474</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>INF</td>
<td>.042</td>
<td>.323</td>
<td>.412</td>
<td>1</td>
</tr>
</tbody>
</table>

Source: Results obtained (SPSS output) by the authors.

**Correlation is significant at the 0.01 level (1-tailed).
Correlation is significant at the 0.05 level (1-tailed).

The results of correlation coefficient are as explained from Table: 2. Returns on Assets has a positive co-relation with the Inflation Rate (r = 0.572) and with the Interest Rates Spread (r= 0.181). Where the exchange rate has a negative correlation with returns on assets (r = -0.571).

6.3 Regression Analysis

The study conducted a regression analysis to depict the extent of the relationship between the study variables. The results of regression analysis are as explained from Table 3:

Table 3. Model Summary

<table>
<thead>
<tr>
<th></th>
<th>R</th>
<th>R²</th>
<th>Adjusted R²</th>
<th>Std. Error of the Estimate</th>
<th>Durbin-Watson</th>
</tr>
</thead>
</table>

\[ \text{Model Summary} \]
The results of the model as shown by Table 3 show that there exists a strong correlation with a coefficient of 0.759. Adjusted $R^2$ is 0.365 this indicates that 37% of the variations in the performance of the government commercial banks may be explained by the dependent variables of the study namely Exchange Rates, Inflation, Interest Rates and Size. Coefficient of determination ($R^2$) is 0.576, which implies the maximum percentage value that the independent variables explain 57.6% changes of the financial performance of the Banking Sector in Bangladesh.

6.4 Analysis of variance

The analysis of variance was conducted to determine the reliability of the model in describing the relationship that exists. The results of analysis of variance are explained from Table: 4;

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>175.483</td>
<td>3</td>
<td>58.494</td>
<td>2.721</td>
<td>.137</td>
</tr>
<tr>
<td>Residual</td>
<td>128.977</td>
<td>6</td>
<td>21.496</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>304.460</td>
<td>9</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

As shown in Table 4 the Model F (3, 6) = 2.721, $p < 21.50$ developed is significant since the $p$-value of 0.137 is less than 0.25. This means that the independent variables in the model have significant effect on the dependent variable.

6.5. Coefficients

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients ($\beta$)</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>-10.010</td>
<td>-</td>
<td>-1.233</td>
<td>0.264</td>
</tr>
<tr>
<td>CEX</td>
<td>-0.737</td>
<td>-0.488</td>
<td>-1.810</td>
<td>0.120</td>
</tr>
<tr>
<td>IRS</td>
<td>0.721</td>
<td>0.130</td>
<td>0.489</td>
<td>0.642</td>
</tr>
<tr>
<td>INF</td>
<td>1.515</td>
<td>1.775</td>
<td>0.126</td>
<td></td>
</tr>
</tbody>
</table>

The coefficients of independent variables are shown in the Table 5. Exchange Rate has a coefficient of -0.737; Inflation has a coefficient of 1.52 and Interest Rate has a coefficient of 0.721. This implies that, Interest Rate and Inflation Rate have a positive effect on the banks’ financial performance where as Exchange Rate has a negative effect. But these coefficients of independent variables are insignificant even at 10 percentage significance level. The predictive model thus adopted by the study entail,

$$ROA = -10.010 - 0.737 \text{ CE}_{Xt} + 0.721 \text{ IR}_{St} + 1.515 \text{ IN}_{Ft} + \varepsilon_t$$

7. CONCLUSIONS

The study found a weak negative association between exchange rate fluctuations and financial performance. Additionally, the Bangladeshi taka exchange rate against the US Dollar was found to be high during the study period. In essence, the Bangladesh currency has been depreciating in values against the dollar over the recent years and this depreciation has negative effects on returns. The study also concludes that total assets owned by commercial banks the inflation rates were increasing over the years.

The relationship however between inflation and returns on assets was positive and hence it positively impacted performance. Interest rate spread positively affects returns on assets. The study
concludes that interest rates especially lending rates have been increasing over time whereas the same observation was not eminent in deposit by banks. The study therefore concludes that the interest rates spread has been increasing in the recent years since borrowing had become expensive thus profitable whereas deposits rates were very small. This therefore translated to higher returns by banks since customers pay more and earn less when they make deposits in banks.

8. MANAGERIAL IMPLICATIONS

The Bangladesh Bank ought to implement efficient monetary and fiscal policies so as to help curb significant deficits in balance of payments and put measures to safeguard the value of the domestic currency. This would ensure that the value on the same does not fluctuate much day in day out.

The Bangladesh government should streamline the immediate economic environment whereby all commercial banks operate in this country. This measure would curb variances in the deposit and lending rates. Market stabilization of the banking sector would regulate lending and deposit rates thus ensuring that the rates are almost uniform across all banks.

International funding should be limited to small extent so that the domestic currency can be strong in the international money markets. Banks were observed to be profitable at a time when the economy was bad whereby other sectors were experiencing difficulties in remaining afloat. The banking industry benefits in such times since the interest rate spread and inflation are high. However, the government should put measure to curb the rising of inflation in double digits.

9. LIMITATIONS AND FUTURE RESEARCH

The research concentrated on Ten years (2009 to 2018). The study period was therefore not entirely exhaustive in investigating exchange rate fluctuations effects on the financial performance of Bangladesh bank. Research with a wider time span would be imperative in assessing the independent variables against the dependent variables.

The research used three independent variables (the inflation rate, interest rate spread, exchange rate fluctuation rate, foreign exchange rate growth) in assessing their effects on banks financial performance. Therefore, effects of the other economic variables were not analyzed in this research.

Further assessment should be done to address the challenges that are faced by commercial banks in their attempts to mitigate against foreign exchange risks. This study used the US dollar fluctuation to measure the foreign exchange fluctuations. Future studies ought to be done using other international currencies for instance the Sterling pound or the Euro with reference to the Bangladesh Taka. This would ensure that comparisons in fluctuations with other currencies can be done and the effects of such changes studied against firm performance. Further studies can be done on other sectors and not entirely the banking sector for instance firms in energy, manufacturing, agriculture, tourism and other sectors. This would provide a wide pool of research findings that can be compared across the business fraternity for optimal policy formulation.

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REFERENCES


APPENDIX

### Appendix I. List of State-owned Commercial Banks in Bangladesh

<table>
<thead>
<tr>
<th>Name of State-owned Commercial Banks in Bangladesh</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Sonali Bank Limited</td>
</tr>
<tr>
<td>2. Agrani Bank Limited</td>
</tr>
<tr>
<td>3. Janata Bank Limited</td>
</tr>
<tr>
<td>4. Rupali Bank Limited</td>
</tr>
<tr>
<td>5. Bangladesh Development Bank Limited</td>
</tr>
<tr>
<td>6. Basic Bank Limited</td>
</tr>
</tbody>
</table>