

# Impediments of Investment and Impact of Monetary Policy to Drive Investment for Economic Growth in Bangladesh

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**Abstract**—Economy of Bangladesh seems out of the wood with some favorable macroeconomic and microeconomic indicators such as, Moody's rating of Ba3 (stable outlook) for last six consecutive years, Fitch ratings of BB-(stable outlook) for second time, stable foreign exchange rate, sufficient foreign exchange reserve, low cost external borrowing, surplus in balance of payment, low fuel price in international market, controlled inflation rate, less pressure in government subsidy, declining lending interest rate (however not in a single digit yet), some recent mega projects implemented by Government of Bangladesh etc. But, Bangladesh is not being able to turn over a new leaf because of moving around 6 % GDP growth rate over the last decade resulting from sluggish private sector investment growth in the economy of Bangladesh. There are some road blocks that can be responsible for sluggishness of investment growth in Bangladesh such as high lending interest rate compared to other Asian countries, political unrest, inadequate power (electricity, oil, gas etc.) generation and supply, infrastructure problem, scarce land availability, corruption in public and private organizations, illegal transfer of investable funds abroad, lack of confidence on government policies, high interest rate of government financial instruments (National Savings Deposit) as safe source of alternative investment etc. In this context, we have identified to what extent above mentioned factors are responsible for investment sluggishness in Bangladesh. Besides, we have observed how the tools of monetary policy can be used effectively to accelerate investment for economic growth in Bangladesh. This paper also investigates the impact of monetary policy to drive investment growth in Bangladesh based on the credit disbursement by financial institutions to the three major sectors of GDP that includes agriculture, industry and service sector against GDP of those particular sectors. We have developed regression model to estimate the required level of loan disbursement from financial institutions to achieve targeted level of GDP growth rate of fiscal year 2015-16. All the primary and secondary data have been analyzed using SPSS software. At the end of the paper, we have recommended some measures to improve in each and every impediments of investment and tools of monetary policy for ensuring investment growth and achieving targeted economic growth in Bangladesh.

**Keywords:** Monetary Policy; Investment Sluggishness; GDP Growth; Inflation; Bangladesh Bank.

## 1. INTRODUCTION

Monetary policy can be defined as the management of money supply and interest rate by central bank (Bangladesh Bank) that works through expansion or contraction of investment. When inflation is high and GDP growth rate is satisfactory then contractionary monetary policy is taken to influence prices of goods by managing purchasing power of money for stabilizing inflation. On the other hand, when GDP growth rate is sluggish and inflation is under control then expansionary monetary policy is taken to accelerate investment growth [1]. It is to be noted that, satisfying all the expectations together in a single monetary policy seems impracticable. Bangladesh Bank needs to prioritize expectations in order to boost investment growth and meet the aim of achieving maximum economic growth in Bangladesh. For the last half of FY 2015-16, Bangladesh Bank has taken expansionary monetary policy focusing on ensuring quality credit expansion and draw special attention toward growth of agricultural and other productive sectors rather than luxury sector for stimulating investment.

Central bank (Bangladesh Bank) in any country has been entrusted the duty of regulating the volume of currency and credit in a country. It uses several tools as a function of monetary management to achieve the goals of moderate inflation and sustainable growth. It influences the money supply in the economy through bank rate (interest rate at which central bank provides loan to commercial banks) policy, open market operations through repo and reverse repo (repo refers to purchasing of government securities through Bangladesh Bank where reverse repo refers to selling of government securities to commercial banks by Bangladesh Bank) and variable reserve ratio (Statutory Liquidity Reserve and Cash Reserve Ratio) as quantitative method and rationing of credit (giving restriction in providing loan), direct action (penalizing banks for loan disbursement in any unfavorable sector), moral suasion (persuading banks to provide loan to different sectors), regulation of consumer's credit (purchasing

of consumer goods against installment facility rather than cash) and fixation of margin requirement (requirement of own fund to get credit facility from bank) as qualitative method of credit control that together change the amount of loanable fund and lending interest rate according to money requirement in the economy.

At present, investment in the economy of Bangladesh is sluggish resulting excess liquidity in banking sector due to lack of loan seeker. In FY 2014-15, investment became 28.97 % of GDP from the 28.58 % of GDP in previous fiscal year. Private sector investment became 22.07 % of GDP in FY 2014-15 from the 22.03 % of GDP in previous fiscal year. On the other hand, public sector investment became 6.90 percent of GDP in FY 2014-15 from the 6.55 % of GDP in previous fiscal year [1]. According to Bangladesh Bank figures in October 2015, deposits in the banking sector stood at Tk 7,258.6 billion against disbursed loan of Tk 706.2 billion only [2]. Due to sluggish loan demand by the loan seekers in 2015, inter-bank call money rate had dropped to a decade low of 2 % [2]. Bangladesh Bank has stopped taking reverse repo towards the end of the year 2015 and loans to commercial banks has remained suspended for last six months to exert pressure on the commercial banks to make investments to productive sector rather than generating return from idle money.

## 2. RATIONAL OF THE STUDY

Since the last few years, we have seen investment sluggishness in the economy of Bangladesh. But, it has been rarely found to identify the prime reasons for investment sluggishness among the large number of reasons to put more emphasize for improvement in that particular reasons. Besides, all the tools of monetary policy are not equally effective to contribute for stimulating investment and accelerate GDP growth rate that also requires to find out the more effective tools to put more emphasize. From the review of literature, we have found some research gaps to have some scopes of research under the present economic context. The research gaps may include lack of contemporary survey to the investors and bankers to find out the major causes of investment sluggishness, lack of contemporary survey to the bankers of central bank and commercial bank to depict the major tools of monetary policy to drive investment growth, limitation of identifying to what extent sector wise loan disbursement can generate sector wise output growth, lack of estimating the required level of loan disbursement to achieve targeted GDP growth rate of current fiscal year (FY 2015- 16). In this context, we have identified the major causes of investment sluggishness through contemporary survey to 250 investors and bankers, depicted the major tools of monetary policy to drive investment growth through contemporary survey to 38 senior bankers of Bangladesh Bank and commercial banks, estimated the impact of sector wise loan disbursement on sector wise GDP, estimated the required level of loan disbursement to achieve the targeted GDP growth rate (FY 2015-16).

## 3. OBJECTIVE OF THE STUDY:

- To depict the investment and economic growth scenario in Bangladesh.
- To identify the prime reasons for sluggish investment growth.
- To identify the key tools of monetary policy to drive investment growth.
- To estimate the correlation, regression, coefficient of determination, hypothesis and trend between sector wise loan disbursement from financial institutions and sector wise GDP over time.
- To recommend some measures for improvement in the obstacles of investment growth and effective utilization of the preferred tools of monetary policy to drive investment growth for economic growth in Bangladesh.

## 4. RESEARCH METHODOLOGY:

### 4.1. Type of research

The study is an empirical research in nature. Theoretical analysis along with numerical evidences has been used to substantiate the findings of the paper comprehensively [3]. Data has been presented in the simple and logical form.

### 4.2. Data Sources

Data and information required for the research were collected from both primary and secondary data sources.

As a source of primary data, a survey has been conducted through structured questionnaires focusing on opinion regarding vital reasons for investment sluggishness taking total 250 individuals including senior bankers serving in Bangladesh Bank and some commercial banks (50%) and investors of SME businesses and corporations (50%) to collect data (opinion). Besides, another survey has been conducted with the structured questionnaires focusing on tools of monetary policy to drive investment growth in Bangladesh taking into consideration 38 senior bankers serving in Bangladesh Bank (50%) and commercial banks (50%) as sample size.

To develop the theoretical background of the study secondary data were collected from economic reviews, journals, different websites etc. We have taken into consideration the credit disbursement by financial institutions to the three major sectors of GDP (at current market price) that include agriculture, industry and service sector against GDP (at current market price) of that particular sectors for last 10 years. Besides, to estimate the loan disbursement growth rate for achieving targeted GDP growth rate we have considered the total level of GDP at constant price for last ten fiscal years. Data collected from different sources were compared critically and found insignificant mismatching in material facts.

### 4.3. Variables Covered

Well accepted regression model has been developed in the study for evaluating monetary policy of Bangladesh. The model has covered 2 variables including several sectors. Also the factor analysis has covered three factors and 10 variables under those three factors. The factor analysis regarding investment sluggishness with the factors and variables covered is shown in Table-01. Another factor analysis regarding tools of monetary policy covered three factors and eight variables under those three factors. The factor analysis with the factors and variables covered is shown in Table-02.

### 4.4. Sampling Method

For conducting the study simple random sampling (SRS) has been adopted to survey the respondent while different banks and investors were selected purposively. It should be mentioned that a total of 288 structured questionnaires were provided among the respondent as total sample size for two different surveys. The surveys were conducted in April 2016.

### 4.5. Survey Instrument

One structured questionnaire was developed having five (5) facets of reasons for investment sluggishness in Bangladesh which was addressed through 10 statements and another questionnaire contains tools of monetary policy to drive investment in Bangladesh. In both the questionnaires, the respondents were asked to react using a five- step Likert scale ranging from strongly disagree (1) to strongly agree (5).

### 4.6. Data Analysis Tools

Data entry was conducted in SPSS 16.0 data editor and analyzed under some specific hypothesis. Statistical tools like correlation coefficient, regression coefficient and coefficient of determination, analysis of variance (ANOVA), trend analysis and factor analysis were used. Besides, Microsoft Excel has been used to show year to year trend, sector wise contribution of GDP, sector wise distribution of loan etc.

Different statistical tools have been used to assess and interpret the results. For example, regression analysis was used to interpret the average change of GDP in different sectors for unit change of loan disbursement in corresponding sectors. Factor analysis has been conducted using SPSS software to find out major dimensions of sluggish investment growth in Bangladesh and more effective tools of monetary policy to drive investment growth in Bangladesh.

## 5. LIMITATION OF THE STUDY:

- It is not possible to draw multiple regression model that requires linear regression model only as there is high correlation among the independent variables (loan disbursement to agriculture, industry and service sector).
- The survey has been conducted through purposive sampling rather than random sampling.

## 6. REVIEW OF LITERATURE

(Rahman , 2005: 152-156) in his study regarding “Private Investment and Economic Growth in Bangladesh: An Empirical Investigation” has identified that effects of private sector investment and public sector investment differs significantly in long term economic growth of Bangladesh. Hence, he has drawn the conclusion that private sector investment plays more important role compared to public sector investment in the economic growth of Bangladesh [4]. (Islam , 2010:69-75) in his research paper named “Monetary Policy and Money Supply Process in Bangladesh: An Analytical Review” has found that interest rate was liberalized in 1990s under financial sector reform program through Bangladesh Bank to make it more competitive and market oriented. But it is still high as prior to the reform programme due to directed lending to special sectors of government by State Owned Commercial Banks and Specialized Banks resulting imperfections and inefficiencies in banking sector, high provisioning for non-performing loan, high administrative cost for manpower and opening new branches etc. He has also found that expansionary monetary policy through easy availability of credit can flourish private sector where credit restrained tighter monetary policy cannot be popular to business community [5]. (Younus , 2012:10-15) in his research paper named “Relative Effectiveness of Monetary and Fiscal Policies on Output Growth in Bangladesh: A Co integration and Vector Error Correction Approach” has found that monetary policy is more effective than fiscal policy in altering real output. Hence, he concluded that we should put more emphasize on monetary policy rather than fiscal policy to achieve higher output growth that will require independent monetary authority and discipline in financial sector as well as public sector [6]. (Haque , 2013:121-123) in his study named “Effect of Public and Private Investment on Economic Growth in Bangladesh: An econometric Analysis” has concluded that there is a positive relationship between public and private investment and economic growth in short and long run where private investment is more effective compared to public investment [7]. (CEP and UNEP , 2015:23-31) in their inquiry working paper named “Monetary Policy and Sustainability: The Case of Bangladesh” have suggested that Bangladesh Bank should conduct research for expansion of knowledge base about the linkage between money and credit growth, price stability and sustainability priorities of the country, assess impact of interest rate change on green investment, add overview in monetary policy statement regarding refinancing lines, evaluate and monitor the impact of refinancing lines, reflect diversification strategy for investment of Bangladesh Bank’s foreign exchange reserves [8].

## 7. STATISTICAL RESULTS AND FINDINGS

From the econometric analysis, findings of the study are categorically discussed in the following subsections:

### 7.1 Factor Analysis of reasons for investment sluggishness in Bangladesh

In this study, descriptive statistics indicated a number of reasons which are responsible for the poor investment sluggishness in Bangladesh from which we have adopted factor analysis to identify the major dimensions by reducing the number of reasons. The analysis used principal component method to extract the factors with varimax rotation technique. Table 01 shows the results of the factor analysis of the reasons for investment sluggishness in Bangladesh. A particular variable has been selected to include as a factor on the basis of high correlation value (factor loadings). The study determined four main factors as the reasons for investment sluggishness in Bangladesh. These factors are:

**Factor I:** High lending interest rate, Corruption in public and private organizations, High interest rate of government financial instruments (NSD) as safe source of alternative investment, Political unrest, Illegal transfer of investable funds to abroad, Inadequate land availability.

**Factor-II:** Inadequate power (electricity, oil, gas etc.) generation and supply, Infrastructure problem.

**Factor-III:** Any other reason.

The respective magnitudes of factor loadings depict the significance of a particular element in a factor and these elements are arranged in order of their magnitudes respectively. The reasons consisting Factor-I are mainly related to *policy adoption of interest rate, attitudes of political parties toward national interest, bureaucracy and money laundering*; the reasons of Factor-II related to *investment friendly infrastructure development problem*; the Factor- III consists of reasons related to *any other reason rather than the reasons mentioned in factor I and factor II*.

The above three factors can be named as policy adoption of interest rate, attitudes of political parties toward national interest, bureaucracy and money laundering, investment friendly infrastructure development problem etc. The result suggests that these factors are mainly responsible for sluggishness of investment growth in Bangladesh.

**Table 1: Factor analysis of reasons for investment sluggishness in Bangladesh**

| Reasons for investment sluggishness in Bangladesh              | Factor 1 | Factor 2 | Factor 3 |
|----------------------------------------------------------------|----------|----------|----------|
| High lending interest rate                                     | .684     |          |          |
| Political unrest                                               | .569     |          |          |
| Inadequate power (electricity, oil, gas) generation and supply |          | .735     |          |
| Infrastructure problem                                         |          | .652     |          |
| Inadequate land availability                                   | .480     |          |          |
| Corruption in public and private organizations                 | .662     |          |          |
| Illegal transfer of investable funds to abroad                 | .497     |          |          |
| Lack of confidence on government policies                      | .563     |          |          |

|                                                                                                       |               |               |               |
|-------------------------------------------------------------------------------------------------------|---------------|---------------|---------------|
| High interest rate of government financial instruments (NSD) as safe source of alternative investment | .652          |               |               |
| Any other reason                                                                                      |               |               | .782          |
| <b>Eigenvalue</b>                                                                                     | <b>2.754</b>  | <b>1.428</b>  | <b>1.015</b>  |
| <b>Percent of variation</b>                                                                           | <b>27.540</b> | <b>14.282</b> | <b>10.148</b> |
| <b>Cumulative percent of variation</b>                                                                | <b>27.540</b> | <b>41.822</b> | <b>51.970</b> |
| <b>KMO=0.744 &amp; only factor loadings <math>\geq 0.40</math> has been shown in the Table</b>        |               |               |               |

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

Source: Field Survey, April 2016

### 7.2 Factor Analysis on tools of monetary policy to drive investment in Bangladesh

In this study, descriptive statistics indicated a number of tools which are used through monetary policy to drive investment in Bangladesh from which we have adopted factor analysis to identify the major dimensions by reducing the number of tools of monetary policy. The analysis used principal component method to extract the factors with varimax rotation technique. Table 02 shows the results of the factor analysis of the tools for monetary policy to drive investment growth in Bangladesh. A particular variable has been selected to include as a factor on the basis of high correlation value (factor loadings). The study determined three main factors as the tools of monetary policy to drive investment in Bangladesh. These factors are:

**Factor-I:** Low variable reserve ratio, Flexibility in regulation of consumer's credit, Flexibility in rationing of credit.

**Factor-II:** Low bank rate, Proper moral suasion.

**Factor-III:** Fixation of less margin requirement, Restriction in reverse repo, Regular guidance for generating new investment opportunities rather than direct action.

The respective magnitudes of factor loadings depict the significance of a particular element in a factor and these elements are arranged in order of their magnitudes respectively. The tools consisting Factor-I are mainly related to *liberalized policy reform in banking sector*; the tools of Factor-II related to the *financial inclusion in banking sector*; the Factor- III consists of tools related to *initiatives against excess liquidity in banking sector*.

The above three factors can be named as liberalized policy reform, financial inclusion and initiatives against excess liquidity in banking sector. The result suggests that these factors are main tools of monetary policy to drive investment in Bangladesh.

**Table 2: Factor Analysis on Tools of Monetary Policy to Drive Investment**

| Tools of Monetary Policy to Drive Investment in Bangladesh | Factor |      |      |
|------------------------------------------------------------|--------|------|------|
|                                                            | F1     | F2   | F3   |
| Low Bank Rate                                              |        | .572 |      |
| Restriction in reverse repo                                |        |      | .495 |
| Low variable reserve ratio                                 | .708   |      |      |
| Flexibility in rationing of credit                         | .512   |      |      |

|                                                                                                |               |               |               |
|------------------------------------------------------------------------------------------------|---------------|---------------|---------------|
| Regular guidance for generating new investment opportunities rather than direct action         |               |               | .244          |
| Proper moral suasion                                                                           |               | .251          |               |
| Flexibility in regulation of consumer's credit                                                 | .576          |               |               |
| Fixation of less margin requirement                                                            |               |               | .659          |
| <b>Eigenvalue</b>                                                                              | <b>1.818</b>  | <b>1.779</b>  | <b>1.175</b>  |
| <b>Percent of variation</b>                                                                    | <b>22.730</b> | <b>22.232</b> | <b>14.685</b> |
| <b>Cumulative percent of variation</b>                                                         | <b>22.730</b> | <b>44.962</b> | <b>59.648</b> |
| <b>KMO=0.481 &amp; only factor loadings <math>\geq 0.20</math> has been shown in the Table</b> |               |               |               |

Extraction Method: Principal Component Analysis.  
Rotation Method: Varimax with Kaiser Normalization.  
Source: Field Survey, April 2016

### 7.3. Impact of Loan Disbursement on GDP in Agricultural Sector

From the econometric analysis of the data of last ten fiscal years (2005-2015) regarding loan disbursement to agriculture sector and GDP (current market price) of that sector, following statistical outcome has been found:

**Table 3: Statistical Output**

|                                       | <b>Credit/Loan Disbursement (Agriculture)</b> |
|---------------------------------------|-----------------------------------------------|
| <b>GDP (Agriculture)</b>              |                                               |
| <b>Correlation (R)</b>                | .993                                          |
| <b>R Square</b>                       | .985                                          |
| <b>Constant (<math>\alpha</math>)</b> | 12568.492                                     |
| <b>Beta (<math>\beta</math>)</b>      | .993                                          |
| <b>p Value</b>                        | 0.00                                          |
| <b>Null Hypothesis</b>                | Rejected                                      |

**7.3.1 Coefficient of Correlation:** From the table-3, it has been found that there is a high degree of positive correlation ( $R=0.993$ ) between loan disbursement to agriculture sector and GDP of that sector.

**7.3.2 Regression analysis:** The simple linear regression is developed by taking Loan Disbursement to Agricultural Sector (LDAS) as the independent variable and GDP of Agricultural Sector (GDPAS) as the dependent variable.

The standardized regression model is:  

$$GDPAS = \alpha_0 + \beta_0 LDAS + \epsilon_i$$
(residual factors which account for the variability in regression equation that cannot be explained by the linear effects of the independent variable) (Gujarati, 2012).

The fitted regression model is:

$$\hat{GDPAS} = 12568.492 + 0.993 \hat{LDAS}$$

..... (i)

Here,  $\beta_0 = 0.993$  implies that if loan disbursement to agricultural sector is increased by Tk.1 then GDP of that

sector will be increased by Tk. 0.993. Finally, if loan disbursement to agricultural sector is zero then GDP of that sector will be Tk. 12568.492.

**7.3.3 Coefficient of Determination:** Again, the value of  $R^2 = 0.985$  or 98.5% or 99% this implies that 99% of the total variation of GDP of agricultural sector can be explained by the variation of loan disbursement to agricultural sector and the remaining 1% variation can be explained by the variables which are not included in the regression model.

**7.3.4 Test of Hypothesis:** In this study, we have developed the following hypothesis:

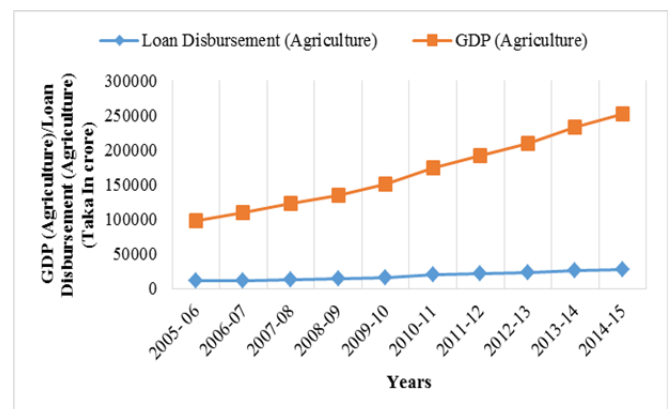
$H_0$ : The money supply from financial institutions to agricultural sector of the economy and the GDP of that sector are not significantly related.

$H_1$ : The money supply from financial institutions to agricultural sector of the economy and the GDP of that sector are significantly related.

In our study, we have used analysis of variance (ANOVA) to test the above hypothesis due to the nature of variables and available information. The statistical method of F-test has been used at 5% level of significance to identify whether there are significant relationship between the money supply from financial institutions to agricultural sector of the economy and the GDP of that sector. In this regard, we can accept null hypothesis if the p value is greater than 0.05 and we can reject the null hypothesis if the p value is less than 0.05.

**Comment:** Here, the p value is 0.000 which is less than 0.05. Hence, the null hypothesis is rejected which means that the money supplies from financial institutions to agricultural sector of the economy and the GDP of that sector are significantly related.

**7.3.5 Trend Analysis:** Graphical presentation of GDP of agricultural sector and loan disbursement to agricultural sector corresponding to several years are given below.



Source: Bangladesh Economic Review 2014-15  
**Fig. 1: GDP and loan disbursement in agriculture sector against several years**

From the above figure, we have found that the trend to be increasing in GDP of agricultural sector and loan disbursement to that sector in different phases throughout last ten years (observational period). Since FY 2005-06, disbursement of agricultural loan has been increasing gradually but GDP of that sector is increasing more rapidly. It would be seen that, agricultural loan disbursement growth rate has become 141.65% from FY 2005-06 to FY 2014-15. On the other hand, GDP growth rate of agricultural sector has become 158.19% from FY 2005-06 to FY 2014-15.

#### 7.4 Impact of loan disbursement on GDP in Industrial Sector

From the econometric analysis of the data of last ten fiscal years (2005-2015) regarding loan disbursement to industrial sector and GDP (current market price) of that sector, following statistical outcome has been found:

Table 4: Statistical Output

|                       | Credit/Loan Disbursement (Industry) |
|-----------------------|-------------------------------------|
| GDP (Industry)        |                                     |
| Correlation (R)       | .988                                |
| R Square              | .977                                |
| Constant ( $\alpha$ ) | 18983.823                           |
| Beta ( $\beta$ )      | .988                                |
| p Value               | 0.00                                |
| Null Hypothesis       | Rejected                            |

**7.4.1 Coefficient of Correlation:** From Table-04, it has been found that there is a high degree of positive correlation ( $R=0.988$ ) between loan disbursement to industrial sector and GDP of that sector.

**7.4.2 Regression analysis:** The simple linear regression is developed by taking loan disbursement to Industrial Sector (LDIS) as the independent variable and GDP of Industry Sector (GDPI) as the dependent variable.

The standardized regression model is:  

$$GDPI = \alpha_1 + \beta_1 LDIS + \epsilon_i$$
(residual factors which account for the variability in regression equation that cannot be explained by the linear effects of the independent variable) (Gujarati, 2012).

The fitted regression model is:

$$\hat{GDPI} = 18983.823 + 0.988 \hat{LDIS} \quad (ii)$$

Here,  $\beta_1 = 0.988$  implies that if loan disbursement to industrial sector is increased by Tk.1 then GDP of that sector will be increased by Tk. 0.988. Finally, if loan disbursement to industrial sector is zero then GDP of that sector will be Tk. 18983.823.

**7.4.3 Coefficient of Determination:** Again, the value of  $R^2 = 0.977$  or 97.7% or 97% which implies that 97% of the total variation of GDP of industrial sector can be explained by the variation of loan disbursement to that sector and the remaining 3% variation can be explained by the variables which are not included in the regression model.

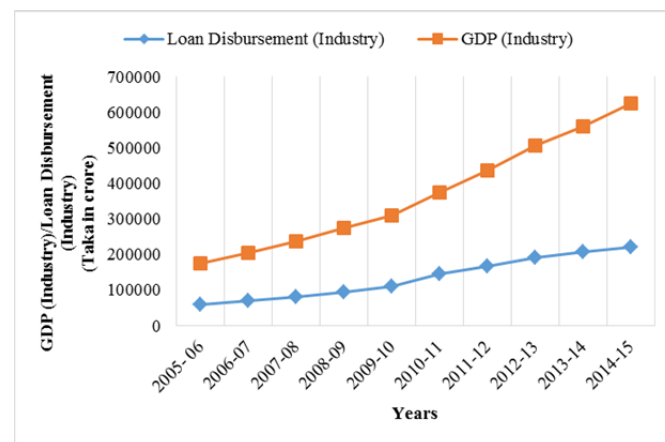
**7.4.4 Test of Hypothesis:** In this study, we have developed the following hypothesis:

$H_0$ : The money supply from financial institutions to industrial sector of the economy and the GDP of that sector are not significantly related

$H_1$ : The money supply from financial institutions to industrial sector of the economy and the GDP of that sector are significantly related

**Comment:** Here, the p value is 0.000 which is less than 0.05. So, the null hypothesis is rejected which means that the money supplies from financial institutions to industrial sector of the economy and the GDP of that sector are significantly related.

**7.4.5 Trend Analysis:** Graphical presentation of GDP of industrial sector and loan disbursement to industrial sector corresponding to several years are given below.



Source: Bangladesh Economic Review 2014-15

Fig. 2: GDP and loan disbursement in industry sector against several years

In aggregate, we have found that trend to be increasing in GDP of industrial sector and loan disbursement in industrial sector in different phases throughout last ten years (observational period). Since FY 2005-06, disbursement of industrial loan has been increasing gradually but comparatively GDP of industrial sector is increasing more rapidly. It would be seen that, GDP growth rate of industrial sector has become 246.74% from FY 2005-06 to FY 2014-15. On the other hand, loan disbursement growth rate of industrial sector has become 476.60% from FY 2005-06 to FY 2014-15.

### 7.5 Impact of loan disbursement on GDP in Service Sector

From the econometric analysis of the data of last ten fiscal years (2005-2015) regarding loan disbursement to service sector and GDP (current market price) of that sector, following statistical outcome has been found:

Table 5: Statistical Output

|                       | Credit/Loan Disbursement (Service) |
|-----------------------|------------------------------------|
| GDP (Service)         |                                    |
| Correlation (R)       | .996                               |
| R Square              | .991                               |
| Constant ( $\alpha$ ) | 161966.289                         |
| Beta ( $\beta$ )      | .996                               |
| p Value               | 0.00                               |
| Null Hypothesis       | Rejected                           |

**7.5.1 Coefficient of Correlation:** From Table-05, it has been found that there is a high degree of positive correlation ( $R=0.996$ ) between loan disbursement to service sector and GDP of that sector.

**7.5.2 Regression analysis:** The simple linear regression is developed by taking loan disbursement to service sector (LDSS) as the independent variable and GDP of service sector (GDPSS) as the dependent variable.

The standardized regression model is:  
 $GDPSS = \alpha_3 + \beta_3 LDSS + \epsilon_i$  (residual factors which account for the variability in regression equation that cannot be explained by the linear effects of the independent variable) (Gujarati, 2012).

The fitted regression model is:

$$\hat{GDPSS} = 161966.289 + 0.996 \hat{LDSS}$$

..... (iii)

Here,  $\beta_2 = 0.996$  implies that if loan disbursement to service sector is increased by Tk.1 then GDP of that sector will be increased by Tk. 0.996. Finally, if loan disbursement to service sector is zero then GDP of that sector will be Tk. 161966.289.

**7.5.3 Coefficient of Determination:** Again, the value of  $R^2 = 0.991$  or 99.1% or 99% % which implies that 99% of the total variation of GDP of service sector can be explained by the variation of loan disbursement to that sector and the remaining 1% variation can be explained by the variables which are not included in the regression model.

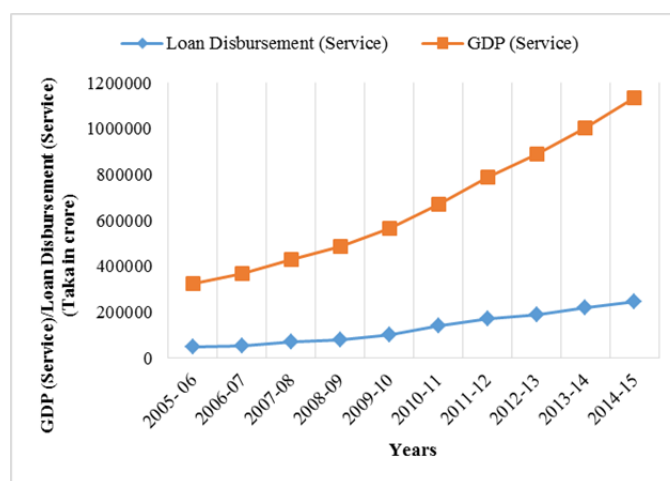
**7.5.4 Test of Hypothesis:** In this study, we have developed the following hypothesis:

$H_0$  : The money supply from financial institutions to service sector of the economy and the GDP of that sector are not significantly related

$H_1$  : The money supply from financial institutions to service sector of the economy and the GDP of that sector are significantly related

**Comment:** Here, the p value is 0.000 which is less than 0.05. So, the null hypothesis is rejected which means that the money supplies from financial institutions to service sector of the economy and the GDP of that sector are significantly related.

**7.5.5 Trend Analysis:** Graphical presentation of GDP of service sector and loan disbursement to service sector corresponding to several years is given below.



Source: Bangladesh Economic Review 2014-15

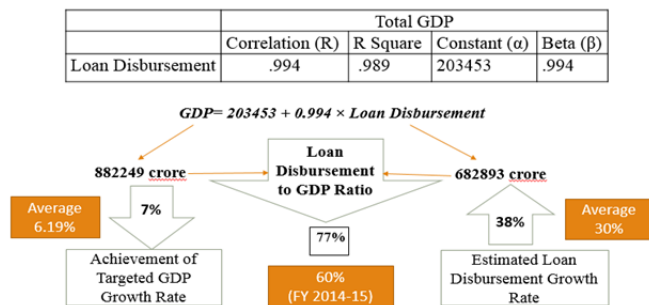
Fig. 3: GDP and loan disbursement in service sector against several years

In aggregate, we have found the trend to be increasing in GDP of service sector and loan disbursement in service sector in different phases throughout last ten years (observational period). Since FY 2005-06, disbursement of loan to service sector has been increasing gradually but comparatively GDP of service sector is increasing more rapidly. GDP growth rate of service sector has become 217.42% from FY 2005-06 to FY 2014-15. On the other hand, loan disbursement growth rate of service sector has become 428.83% from FY 2005-06 to FY 2014-15.

### 7.6. Estimation of level of loan disbursement to achieve targeted GDP growth

According to the budget of 2015-16, the targeted GDP growth rate is 7 % however it seems ambitious as it has not been achieved yet in any year since the liberation of Bangladesh. From the correlation coefficient using the secondary data of last ten years, it has been found that there is a strongly positive correlation (0.994) between total loan disbursement from financial institutions for investment in agriculture, industry

and service sector and GDP. Hence, the following regression model can be drawn to estimate the level of loan disbursement for investment to achieve the targeted level of GDP growth rate.



From the data of last ten fiscal years (2006-15), we see that average level of loan disbursement was BDT 284370 crore over the last ten years. Loan disbursement of last fiscal year (2014-15) was BDT 496073. GDP (constant price) was BDT 824532 crore in last fiscal year (2014-15). From the above mentioned regression model we can estimate that, if targeted GDP growth rate is 7 % from the GDP (constant price) of last fiscal year (2014-15) than required level of GDP (constant price) will be BDT 882249 crore that will require loan disbursement growth rate of 38 % on loan disbursement of last fiscal year amounting BDT 682893. Hence, estimated loan disbursement to GDP ratio will be 77% which was 60% in last fiscal year (FY 2014-15).

## 8. CONCLUSIONS AND RECOMMENDATIONS

The study made the following recommendations on the basis of the findings from factor analysis regarding reasons for investment sluggishness:

- Ensuring efficiency through proper feasibility study of policy adoption of interest rate and emphasizing national interest rather than personal interest by political parties, taking independent decisions by private and public organizations focusing on corporate governance, transparency and accountability, implementing the mega projects taken by the government for making investment friendly environment and close supervision with support of IT experts for anti-money laundering activities as well as incentives for investment within the country should be urgently set in action.

From factor analysis regarding identifying the main tools of monetary policy to drive investment following recommendation can be drawn:

- Ensuring investment friendly liberalized policy reform in banking sector, taking regular financial inclusion programmes to spread banking services for the peoples out of banking services and taking initiatives to pressurize banks for disbursement of loanable funds to the creditworthy borrowers to get rid of excess liquidity problem should be urgently set in action.

From the estimation of targeted level of loan disbursement growth rate for achieving targeted level of GDP growth rate following recommendation can be drawn:

- Government have to ensure 8 % more loan disbursement growth rate than the average growth rate of 30 % for last ten years coordinating with the banking sector and other financial institutions that are doing shadow banking to achieve targeted 7 % GDP growth rate for FY 2015-16. Hence, investment friendly policy reform and financial inclusion for credit growth by Bangladesh Bank as well as diversified loan products development by the commercial banks through financial engineering should be urgently set in action.

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