

**APPROXIMATION OF THE INFLUENCE OF MONETARY POLICY ON  
ECONOMIC GROWTH, EMPLOYMENT GENERATION, AND  
INFLATION – A CASE STUDY IN BANGLADESH**

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**ABSTRACT**

*Monetary policy in general influences the price level, growth of the economy, and employment generation. To estimate the effects of the monetary policy in Bangladesh, at first the functions and influences of different monetary policy tools used by the “central banks” of the developed countries have been reviewed. Next, the impact of the monetary policy of Bangladesh Bank and government have been analyzed at which the data on money supply, growth of the GDP, change in the price level, and change in the unemployment rate have been quantitatively analyzed. For this, first hypothesis has been laid down and statistically tested, whether there is any correlation between (i) money supply and growth of the GDP, (ii) money supply and inflation, and (iii) money supply and employment generation. Depending on the nature of correlation between the independent and dependent variables and the degree of correlations next the validity of the hypothesis identified. On the basis of the outcome of the qualitative and quantitative analysis in the end inference has been made and conclusion drawn.*

**Key Words:** *Analysis of variance, Bangladesh Bank, bank rate, central banks, coefficient of correlation, discount rate, discount window, economic growth, exchange rate, monetary policy, interest rate, inference, inflation target, interest rate, minimum reserve requirements, monetarist, monetary policy, objective, open market operations, money supply, research methodology, Treasure Bills.*

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## 1. INTRODUCTION

Monetary policy is the process by which the government, central bank, or monetary authority of a country controls the supply of money and the rate of interest in order to attain a set of objectives oriented towards the growth and stability of the economy (Friedman). It uses different tools to foster economic growth, control inflation, and reduce unemployment. Monetary policy is either an expansionary, contractionary, accommodative or neutral policy. Expansionary monetary policy is used to combat unemployment in recessions which lowers interest rates and enhances investment, while contractionary monetary policy involves raising interest rates in order to increase the cost of investment and combat inflation. An accommodative monetary policy sets interest rate to create economic growth; neutral monetary policy, on the other hand, aims at neither to foster growth nor to combat inflation. Nevertheless, most economists think that price stability should be the primary goal of any monetary policy, since price stability is the key to the economic growth, employment generation, as well as to maintaining moderate interest rates.

Most of the developing countries have problems in ascertaining an effective monetary policy, because the financial systems of these countries are seldom enough developed, the banks have poor records; and the central banks are rarely independent. Very often the monetary policy in these countries is to take a backseat to the political desires of the incumbent government or used to follow non-monetary goals. However, recently attempts have been undertaken also in many developing countries to liberalize and reform the financial system, and the central banks are being progressively given more authority to set economic goal oriented monetary policy.

## 2. The Advent of the Theory – A Literature Review

The idea of monetary policy began with the establishment of the Bank of England in 1694, which got the responsibility to print notes and backed them with gold reserve (Sullivan). Monetary policy was seen at that time as an executive decision, and the goal of monetary policy was to maintain the value of coins, print notes and prevent the coins from leaving circulation. Eventually, central banks were established also in other industrializing nations. Since then the central banks have gained valuable practical and theoretical knowledge regarding the monetary policy. And now in the age of globalization the central banks have various tools like (i)

Minimum Reserve Requirement, (ii) Discount Rate, (iii) Open Market Operations, (iv) Interest Rate and (v) Exchange Rate to form monetary policy framework.

The minimum reserve or vault cash is the portion of the deposits that the banks and other depository institutions are required to hold as cash in their vaults. With minimum reserve the central banks intend to administer the reserves of the banks, and trigger a chain of reactions that influence interest rates, foreign-exchange rates, and the amount of money and credit in the economy. These changes should instigate adjustments in consumption, affect saving and investment decisions, and ultimately influence growth of output, employment, and price level. The minimum reserve has the effect of 'multiple money creation'. Let's the minimum reserve requirement ratio is 10% and a bank receives a \$100 deposit, it can lend out \$90. Let's the bank lends \$90 to a borrower, who deposits it in the bank. So, the bank can now lend out \$81. As this process continues, ultimately the initial deposit of \$100 involves a total deposit of \$1,000 ( $\$90 + \$81 + \$72.9 + \dots = \$1,000$ ) (Samuelson). This example shows that it is difficult to administer lending with minimum reserve requirement. In addition, the banks have the opportunity to enter into the reserves market which further limits the role of minimum reserve requirements. The central banks of some countries have no reserve requirements; in these countries the lending is constrained by other regulations, such as taxation, ceilings, etc.

Discount rate enables the central banks to influence the borrowing of the commercial banks from the central banks. To meet short-term needs, the commercial banks can borrow at a discount rate from the central bank. Depending on the cyclical conditions in the economy the discount rate is reset. As for instance, from December 1990 to July 1992, the Federal Reserve System (Central Bank of the USA) cut the discount rate seven times from 7% to 3% to foster investment. From May 1994 to February 1995 the rate was raised four times from 3% to 5.25% to counter economic overheating and inflation (United States Monetary Policy).

Maintaining the funds rate around the target level and administer the reserves of the banks the central banks trade government securities in the open market. In case of shortages of reserves of the banks the central banks buy securities from the banks to increase the reserves of banks and sink the funds rate (Orphanides). In case of excess reserves of the banks the central banks sell securities to the banks to decrease reserves and increase the funds rate. Buying securities from the banks increase the reserves of banks which sink the funds rate; and by selling securities to the banks decrease the reserves which increase the funds rate. As for instance in this purpose, in

1997 the Federal Reserve System purchased and sold short-term Treasury Bills of \$3.62 trillion and \$3.58 trillion respectively (Treasury Bulletin). To meet short term fund needs of the banks the central banks use repo, in which the central banks purchase securities from the banks with the agreement that these will be bought back by the banks within a short period of time, mostly within seven days. Repo increases the reserves of banks temporarily; but it vanishes when the term expires.

As under fixed exchange rate system<sup>1</sup> foreign currency is bought or sold by the central banks to attain the target exchange rate, it changes the monetary base (Lindert). If the central banks buy foreign exchange, the monetary base expands; and when the central banks sell foreign exchange, the monetary base shrinks. As for instance, if a central bank buys foreign exchange to support the exchange rate, the monetary base expands. If the central bank intends to rinse out this impact completely, it has to sell as for example government bonds to diminish the monetary base by an equal amount. The activities regarding the management of the exchange rate may cause the central bank to lose control over the monetary policy. On the other hand, the free floating exchange rate system enables the central banks to follow monetary policies independently of the exchange rate.

In 1980s the economists began to believe that to ensure optimal monetary policy the central banks must be independent of the government because this is only way to hinder the misuse of the monetary policies influencing the electoral result, such as the re-election of the incumbent government (Krugman). Further, the economists began to believe that increasing the monetary supply at a low but constant rate is the best way of maintaining low inflation and growth of the economy (Nelson). Since 1990s, the central banks of the developed countries started to adopt formal inflation targets making the outcomes of the monetary policy transparent. Currently the central banks of these countries have to proclaim annual inflation target; and if it fails to achieve the target, they have to explain the reasons behind.

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<sup>1</sup> Under fixed exchange rate system every unit of local currency is backed by a fixed unit of foreign currency, and the foreign currency is bought and sold by the central bank to maintain the target exchange rate. The target rate, however, can be a fixed band within which the exchange rate may fluctuate until the monetary authority intervenes to buy or sell as necessary to maintain the exchange rate within the band. The fixed exchange rate system with a fixed rate can be considered as a special case where the band is set to zero. There are varying degrees of fixed exchange rates, which can be ranked in relation to how rigid the fixed exchange rate is with the anchor nation. As for instance, under the system of fiat fixed rates, the monetary authority declares a fixed exchange rate but does not actively buy or sell currency to maintain the rate. Instead, the rate is enforced by non-convertibility measures (Samuelson).

It is worthwhile to mention in the end of the theoretical discussion that some economists suspect whether monetary policy can smooth business cycles (Bernanke). In this regard, it is pertinent to refer that in the short run the central banks can stimulate with its monetary policy tools the aggregate demand, because the prices of a significant number of produces are fixed in the short run and firms can produce as many goods and services as are demanded (Dornbush & Fisher). In the long run a monetary expansion, however, causes inflation which has no or very insignificant impact on economic growth. Some economists even doubt that it may be the expansionary and contractionary monetary policies of the central banks those cause the economic cycle.

### **3. Objective and Methodology of the Study**

#### **Objective of the Study**

The objective of this study is to analyze the impact of the monetary policy tools employed by the Bangladesh Bank till 2009 on the economic performance of the country. The monetary policy tools which were applied by Bangladesh Bank till 2009 and investigated in this study are:

- Reserve Requirement,
- Discount Rate,
- Open Market Operation,
- Interest rate, and
- Exchange Rate.

The study appraised the effect of the monetary policy tools used by Bangladesh Bank on:

- Growth of the GDP,
- Inflation, and
- Employment Generation.

#### **Methodology of the Study**

For investigating theories and phenomenon of social sciences either qualitative or quantitative or both of the research methodologies could be used (Cooper & Schindler). Qualitative research methodology includes different interpretive techniques such as describing, decoding, interpreting, and analysing naturally occurring phenomenon in social world to explain how and why things happen as they happen. Qualitative research techniques could be used at both data

collection and analysis stages. At data collection stages, it includes focus group discussion, interviews, case studies, action research, observation, etc. In analysis stages, it includes the analysis of written or recorded materials, as well as the study of artefacts and trace of evidences from the physical environment. Qualitative research mythology is very often called interpretive methodology, because it strives to understand and develop theories and phenomenon of social sciences through analysis and builds theory, but rarely tests theories.

Quantitative research methodology on the other hand, attempts precise measurement to test theories and hypothesis. It answers questions related to how much, how often, when and who. While survey is a dominant factor for collection of data in quantitative research methodology, frequently secondary data are used in this methodology.

For the preparation of this research article relevant secondary sources of information and data such as books, articles published in national and international journals, government's policy report and bulletins have been studied, and different websites visited. For the analysis of the information in text format qualitative and for the analysis of the statistical data quantitative research methodology have been used. Particularly, to analyze the correlation between money supply in one side and inflation and growth of economy in the other side the computer program SPSS (Statistical Package for Social Studies) have been applied.

#### **4. Monetary Policy in Bangladesh**

After the liberation of the country in 1971 the principal objectives of the monetary policy the country were to control reserves of the banks, regulate direction of the flow of money and credit, preserve the par value of domestic currency, generate employment and income, and foster the growth of the economy in the best national interest (Bangladesh Bank Order). For development Bangladesh followed during this time the model of planed economy. Following set development policy in close collaboration with the government Bangladesh Bank tried to use money supply as an instrument for achieving the goals of the development plans, and programs. The long term focus of monetary policy during this time was the economic growth and stability, but for the short-term it was oriented to resolve immediate problems of the war torn economy.

Nonetheless, along with the political change and achievement of a standby-arrangement of the country with the IMF in 1975, the monetary policy of Bangladesh got a new direction (Khan). Bangladesh Bank started to set henceforth short-term objectives of monetary policy and tried to achieve the targets using control instruments. The annual monetary expansion had to be fixed now; and the volume of the broad money ( $M_2$ )<sup>1</sup> had to be adjusted along with forecast of the growth rate of the real GDP, rate of inflation and foreign exchange reserve. Bangladesh Bank began to monitor the credit, and tried to hold the target through imposing ceilings on credit to the government, public, and private sector. Moreover, it set objective to provide the desired volume of credit at a low rate of interest.

The monetary policy followed by the Bangladesh Bank after 1975 may seem to be pragmatic, but in fact Bangladesh Bank possessed no effective tools for adjusting money supply following the market signals. So, the monetary policy could not be fully used in favour of economic growth, employment generation and control of the price level.

In the end of 1980s Bangladesh left the course of planed economic development followed since the liberation of the country and turned toward free market economy. The financial sector was reformed and Bangladesh Bank moved away from the direct quantitative monetary control to indirect methods of monetary control (Khan, & Sarker). Though the fixation of monetary target continued to function as absolute operative category, the way to achieve it had been changed. Credit ceilings imposed on individual banks and direct control of interest rates were removed. Since then on Bangladesh Bank started to regulate the money supply through the use of the major monetary policy tools like minimum reserve requirement, bank rate, open market operations, and rediscount policy. Until the reform of the financial sector in 1989 the bank rate was not applied in Bangladesh to meet the temporary need of funds of the commercial banks. Before the reform, bank rate was changed in a few occasions and only to align the bank rate with lower market rate of interest. After the reform of the financial sector in 1989, the bank rate began to be used to change the cost of borrowings for banks and thereby to affect the market rate of interest.

The sale and purchase of government securities by the Bangladesh Bank, i.e. the use of repo and reverse repo, to withdraw and correspondingly inject funds into the financial market began to be

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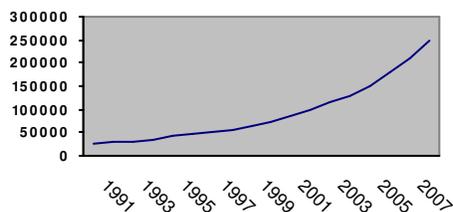
<sup>1</sup> Broad money ( $M_2$ ) includes the sum of the currency in circulation and total deposits of money in banks.

utilized after the financial reform. Rediscount facility was introduced and even open market operations were conducted through weekly, monthly, fortnightly auctions of Treasury Bills (Bangladesh Bank, 2005). Bangladesh Bank had been using 'Cash Reserve Requirement' (CRR) and the 'Statutory Liquidity Requirement' (SLR) since the reform when necessary. What more noteworthy was that Bangladesh Bank used the monetary policy tools as per demand of the financial targets to regulate money supply. In brief, after the reform Bangladesh bank began to use the monetary policy tools particularly SLR, CRR, repo, reverse repo, discount rate, bank rate etc more systematically to influence the volume of the board money or so called  $M_2$ , in favour of economic growth, employment and income generation and price stability.

Next we intend to investigate the influences of the monetary policy used by the Bangladesh Bank. We want to analyse how the usages of monetary tools in Bangladesh have changed the base of the board money and what for effect it has on the growth of the economy, employment generation and price stability.

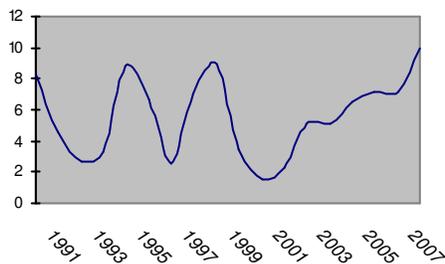
The development of the board money ( $M_2$ ) from 1991 to 2008 shows that, after the reform of the financial sector in 1989, it has grown continuously. In the beginning from 1991 to 1999, the

Graph-1:  $M_2$  From 1991 to 2007



Source of data of the Graph: Appendix

Graph-2: Inflation From 1991 to 2007

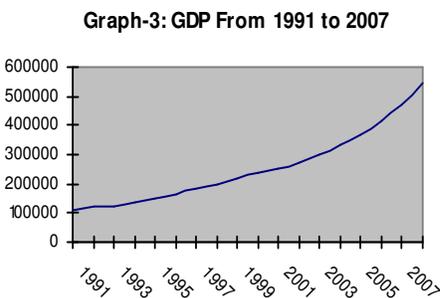


Source of data of the Graph: Appendix

expansion of the money went relatively slow; but from 2000 to 2008 it grew faster (Graph-1). The absolute growth of the board money shows that from 1991 to 1999 it grew from Tk.25004.4 crore to Tk.63026.3 crore, which means a growth of 252% in 9 years. From 2000 to 2008 it grew from Tk.74767.4 crore to Tk.248795 crore, which means a growth of 332% in 9 years (Appendix). That means, in 17 years after the reform of the financial sector in 1989  $M_2$  has increased nearly in 10 times (Appendix). Year to year development of the board money shows that it the beginning from 1991 to 1999 it grew slowly; but from 2000 to 2008 it grew faster. As for instance, in compare to 1991 in year 1992 it grew 14.08%; in 1993 in comparison to 1992 it grew 10.55%, and so on. However, in 2000 in comparison to 1999 it grew 18.62%; in year 2001 in compare to 2000 it grew 16.60%, and so on (Appendix).

The trend of the inflation from 1991 to 2008 shows a remarkable cyclical fluctuation (Graph-2). The first cycle began in 1991 with a peak in the inflation, 8.31%, which went down during the following years 1992 and 1993, and reached the lowest rate of 2.73% in 1993 (Appendix). Nevertheless, after 1993 it began to increase again and in year 1995 it reached once more a peak value of 8.87%. With the end of the first cyclical development of the inflation in 1995 began the second cycle which ended in 1999. During the second cycle from 1995 to 1999 the inflation went down again and reached the lowest value of 2.52% in 1997 and reached a peak of 8.91% in 1999. The third cycle began with the end of the second cycle in 1999 and continued till 2008. The significance of the third cycle was that it prolonged longer than the previous two cycles. The durations of the first and second cycles were 5 and 4 years respectively, but the third cycle prolonged 9 years. During the third cycle the inflation went down sharply in 2001, reached the lowest rate of 1.58% since then. However, after that from 2001 to 2008 the inflation went up steadily and reached in 2008 the highest rate of 9.94% (Appendix). The development of inflation from 2001 to 2008 shows that a new phenomenon might have set forth in the behaviour of inflation, which indicates that the cycle of inflation prolongs longer than before. Inflation could have many causes. We, however, are interested to find whether the monetary policy, i.e., expansion of the board money ( $M_2$ ) had any role in this regard.

The development of  $M_2$  and the growth of the GDP from 1991 to 2008 had astonishing similarity



Source of data of the Graph: Appendix

(Graph-1 and Graph-3). From 1991 to 2008 the GDP grew continuously, but from 2001 to 2008 the GDP grew faster than from 1991 to 2001. Similarly, from 2001 to 2008 the  $M_2$  grew fast from 1991 to 2001 (Appendix).

In comparison to 1991 in 1992  $M_2$  increased 14.08%, in the same year the GDP grew 8.17% (Appendix).

Next year, 1993,  $M_2$  decreased (10.44%), so decreased

also the growth of the GDP (4.88%). In 1994  $M_2$  increased 15.43% and the GDP grew 8.01%. The expansion of  $M_2$  and the growth of the GDP also in the followings years make it evident that from 1991 to 2008 in general with the expansion of  $M_2$  the GDP grew. Particularly the development of  $M_2$  and GDP from 2001 to 2008 makes it apparent that during this period with the expansion of  $M_2$  the GDP grew continuously. From the discussion above it may be

speculated that expansion of  $M_2$  might have some impact on inflation, growth of the GDP and employment generation. Next statistical methods have been used to test whether the growth of the GDP has any correlation with monetary expansion.

Let's put forward the hypothesis (null hypothesis) that 'there was no correlation between the independent variable ( $M_2$ ) and the depended variable (growth of the GDP) and test this hypothesis with help of the 'Analysis of Variance' (ANOVA)<sup>1</sup>. As the calculated value of F, 2052.63, in the ANOVA table is larger than the significance value, 0.00, so the null hypothesis is rejected (Table-1). It means that the null hypothesis is not true that there was no correlation between the independent and dependent variables. Therefore, it is to conclude that there was a correlation between the expansion of  $M_2$  and the growth of GDP.

**Table - 1: ANOVA**

	Sum of Squares	Degree of Freedom	Mean Square	F	Sig.
Regression	276193681897.21	1	276193681897.21	2052.63	.000
Residual	2152891637.29	16	134555727.33		
Total	278346573534.50	17			

**Predictors:**  $M_2$ , **Dependent Variable:** GDP

**Sources of data of the Table:** Appendix [Constructed with SPSS]

Let us now estimate the type and significance of the coefficient of correlation between the expansion of  $M_2$  and the growth of the GDP. It means, next we intend to fix whether the correlation between the expansion of  $M_2$  and the growth of the GDP was positive or negative, and what the rate of change was. The coefficient of correlation<sup>2</sup> between the expansion of  $M_2$  and the growth of the GDP is 0.996 (Table-2). The positive value of the coefficient of correlation indicates that there was a very strong positive correlation (0.996) between the expansion of  $M_2$  and the growth of the GDP. It means that with the expansion of  $M_2$  the GDP grew and vice versa. The value of R, 0.996, means that there was 99.6% correlation between the expansion of  $M_2$  and the growth of the GDP during the period from 1991 to 2008. The value of  $R^2$ , 0.992, suggests that every unit increase in the independent variable, the money supply, caused 0.992

<sup>1</sup> The Null Hypothesis is: There is no correlation between  $M_2$  and GDP. The variance analysis has been done using the statistical program, the SPSS (Statistical Program for Social System).

<sup>2</sup> The coefficient of correlation has been calculated using the statistical program, the SPSS (Statistical Program for Social System).

unit increases in the dependent variable, the growth of the GDP. It means that there was nearly a perfect correlation between the expansion of  $M_2$  and the growth of the GDP. In other word, with the expansion of the  $M_2$  the GDP grew nearly at the same rate. It suggests that in the case of Bangladesh the supply of the financial resources was absolutely essential for the growth of the GDP. High value of the standard error of estimate (11599.82) and the low value of R (only 0.996), indicates further the high reliability of the computation of the coefficient of correlation between the money supply,  $M_2$ , and the growth of the GDP.

**Table - 2: Coefficient of Correlation between  $M_2$  and GDP**

R	$R^2$	Adjusted $R^2$	Std. Error of the Estimate
0.996	0.992	0.992	11599.82

**Predictors:**  $M_2$ , **Dependent Variable:** GDP

**Sources of data of the Table:** Appendix [Constructed with SPSS]

Let's now put forward the hypothesis (null hypothesis) that 'there was no correlation between the independent variable, the expansion of  $M_2$  and the depended variable, the inflation' and test the hypothesis again with the help of Analysis of Variance (ANOVA)<sup>1</sup>. The variance analysis of the data of  $M_2$  and inflation from 1991 to 2008 explains the correlation between the independent variable, the expansion of  $M_2$  and the dependent variable, the inflation. As the value of F (0.43) in the ANOVA table is smaller than the value of significance (0.520) the null hypothesis is accepted (Table-3). That means it is true that there was no significant correlation between the dependent variable (expansion of  $M_2$ ) and the independent variable (inflation).

**Table - 3: ANOVA**

	Sum of Squares	Degree of Freedom	Mean Square	F	Sig.
Regression	2.95	1	2.95	.43	.52
Residual	102.10	15	6.81		
Total	105.05	16			

**Predictors:**  $M_2$ , **Dependent Variable:** Inflation

**Sources of data of the Table:** Appendix [Constructed with SPSS]

<sup>1</sup> The Null Hypothesis in this case is: There is no correlation between the independent,  $M_2$  and the depended variable, inflation.

Let's again compute the coefficient of correlation<sup>1</sup> between the expansion of  $M_2$  and inflation to test whether it is true that there was no correlation between them. The value of coefficient of correlation between the expansion of  $M_2$  and inflation (0.168) indicates that from 1991 to 2008 there was positive correlation (0.168) between the expansion of  $M_2$  and inflation (Table-4). The smaller value of  $R^2$  (0.028) indicates that the expansion of the  $M_2$  had a very weak impact in the increase of the inflation. It denotes that every unit change in the  $M_2$  had caused only 0.028 unit change in the inflation. That means, in other word, 2.8% of the increase of the inflation was caused by the expansion of the  $M_2$ . Small value of standard error of the estimate (2.61) and the low value of R (0.168) suggests further the unreliability of the computed very weak correlation between the expansion of  $M_2$  and inflation. So, in summary, it could be concluded that there was only insignificant correlation between the expansion of  $M_2$  and inflation.

**Table - 4: Coefficient of Correlation between  $M_2$  and Inflation**

R	$R^2$	Adjusted $R^2$	Std. Error of the Estimate
0.168	0.028	-0.037	2.61

**Predictors:**  $M_2$ , **Dependent Variable:** Inflation

**Sources of data of the Table:** Appendix [Constructed with SPSS]

The unemployment data in Bangladesh are not annually updated; and it seems that they are gathered in three to four years intervals (Appendix). So, in the absence of continuous data statistical treatments of the same and computation of ANOVA and the coefficient of correlation between the expansion of  $M_2$  and the development in the unemployment rate as above was not possible. The unemployment rate in 1990s remained very low and had an increasing tendency.<sup>2</sup> From 2000 to 2008, however, it had a light sinking tendency. If the annual growth of population, which remained over 2% in Bangladesh, considered in this regard, it becomes evident that the economy had created annually at least 2% more jobs in the country. Otherwise, the annual unemployment rate was larger than what are in the official 'Statistical Yearbooks'. So, it is evidently convincing to conclude that the expansion of the  $M_2$ , which had triggered the growth of

<sup>1</sup> The coefficient of correlation has been calculated using the statistical program, the SPSS (Statistical Program for Social System).

<sup>2</sup> The available data show that in the beginning of the 1990s, the unemployment rate in Bangladesh remained far below the natural rate in the USA and anywhere else in the developed country which is to distrust.

the economy, had also created jobs at least at the rate of the population growth annually and stopped the unemployment rate to increase.

The qualitative and quantitative analysis above lead ultimately to conclude that the expansion of the  $M_2$  has strongly supported the growth of the economy and the generation of employment during period from 1991 to 2008. The supply of money had insignificant role for the increase of the inflation, i.e., the upward trend of the price level.

Inflation in Bangladesh is explained by supply side factors particularly higher international commodity prices, deficient monetary policy and the shortfall in domestic food grain production. Large spending on flood and cyclone rehabilitation; higher bank credit for agriculture, industry and services; and the rise in demand from the rapid growth in remittances were other factors for higher inflation. Further, reduction of import duties on food items; subsidized sales, lowering of interest rate on import credit, and other similar measures caused budget deficit and fostered inflation.

For general price level rise in Bangladesh food price inflation is a special concern, because expenditure on food items constitutes more than 58 percent of the total consumption spending (Ahmed). Inflation in Bangladesh varies directly with food price; and higher food price inflation fuelled overall higher inflation. The weakening of local currencies against the US dollar has also contributed to inflationary pressures exacerbating the rise in global commodity and other import prices.

Despite the rising trend, inflation in Bangladesh is lower than in major South Asian countries (Ahmed). The recent inflationary pressure in Bangladesh is largely home grown and has more a cost-push than a demand pull nature. The home grown nature of inflation in Bangladesh gives the opportunity for effective action against it.

## **5. Inference**

All over the world policymakers face difficulties in balancing the trade-off between growth and inflation. Inflation adversely affects the growth of the economy, the financial sector development and the vulnerable poor segment of the population. So, it has become a major concern worldwide including Bangladesh particularly in this decade. In the developed countries, inflation has gone upward in recent years despite low growth. Monetary policy makers in the advanced economies

face a delicate balancing act between alleviating the downside risks to growth and guarding against a buildup in inflation. In the emerging economies, inflation has risen more markedly reflecting both strong demand growth and the greater weight of energy and particularly food in consumption baskets.

One of the fundamental objectives of macroeconomic policy is to sustain high economic growth with low inflation. Despite of debate on the nature of the correlation between inflation and growth in the economic paradigm, there is a consensus that some sort of causalities exist between macroeconomic stability and economic growth. The monetarists view that inflation is always and everywhere a monetary phenomenon (Mishkin), and there would be no inflation without sustained increase in the money supply. This leads to conclude that long-run price stability can be achieved by limiting the rate of money growth in the economy (Gokal). It is observed by many researchers that there is a positive correlation between excess money supply, growth of the economy and inflation (Abdul Qayyum). The money supply first affects real GDP growth but next it affects inflation. So, to avoid inflationary pressures in the economy, the authority of monetary policy must consider development in the real and financial sector.

The prime objective of monetary policy should be to attain price stability, because inflation is harmful to economic growth. Rising of price level may create uncertainty in the economy that hamper smooth economic growth. When the overall level of prices of goods and services changes, it is harder for consumers, businesses and government to interpret the price change that complicates their decision making. Opinion surveys indicate that the public is hostile to inflation, and evidence increasingly suggests that inflation leads to lower economic growth (Fischer). Ensuring macroeconomic stability, supporting the highest sustainable real output growth, and keeping inflation under control should be the main objective of monetary policy. Bangladesh Bank may pursue growth supportive well thought-out monetary policy stance to keep at bay the uptrend in inflationary tendency. It may accommodate monetary stance permitting strong expansion in credit growth to the private sector to sustain economic growth and keep demand-side pressures broadly in check. For policy stance it may consider:

- Short term and long term interest rates,
- Bonds, equities, options, swaps, futures, etc.
- Exchange rates,
- Credit quality,

- Government sector spending and savings,
- Private sector spending and savings, and
- Flow of FDI (foreign direct investments).

To impede higher inflation, Bangladesh Bank must be cautious about monetary policy stance of keeping 'appropriate liquidity' instead of 'adequate liquidity' in the economy. To maintain exchange rate stability and keep the pressure of imported inflation under control pragmatic exchange rate policy may be followed. Besides, the government may adopt appropriate precautionary measures such as reducing import duty on food items, raising food grain imports, extensive rehabilitation programme for flood affected areas and effective measures for higher crop production. Moreover, guaranteed employment programme for rural people during lean seasons, social safety net programs like Food for Work, Vulnerable Group Feeding, Vulnerable Group Development and test relief etc may be expanded for poorer section of people living below poverty line. Government may reduce import duties on food items and food grain, subsidize sales, and lower interest rate on import credit, which cause budget deficit.

Greater integration of the national economy with world's economies means that inflation in the domestic economy is more open to external pressures. So, it is essential to define channels through which global integration can affect inflation and monetary policies. The internationalization of inflation means diminished role for central banks in managing domestic inflation. Following measures may be adopted to manage inflation, foster growth, and generate employment and income:

- a. Bangladesh Bank must be cautious about the growth of money supply. Price inflation is a major threat to macro-economic stability, though some economists advocate that some degrees of moderate inflation is to welcome as a tool for promoting growth and believe that development inevitably involves trade-off between inflation and unemployment. They suggest that wise course resolves the trade-off in favour of less unemployment and inflation. Milton Friedman, however, asserts that high inflation is the result of a high rate of money growth.
- b. Bangladesh Bank may manipulate the nominal interest rate to influence inflation expectations. Recently, the central banks of some developed countries like New Zealand, the UK, and other countries have adopted inflation targeting (IT) framework. Under IT framework, the nominal interest is a flexible policy instrument which has three main

elements. First, there is an explicit target for inflation which is not more than a few percentage points. Second, central banks place more weight on the behaviour of inflation. Third, policies of the central bank are made transparent; and the central bank is made accountable for the policies.

- c. Inflation must be persistently measured by Bangladesh Bank, because monetary policy is pursued on a day-to-day basis and controlling inflation through controlling broad money depends on the relationship between money supply and level of price.
- d. It is primarily the responsibility of the government to ensure economic stability and create favourable environment for full use of the production potentialities. For this, the Bangladesh Bank must provide appropriate monetary conditions. If interest rates are too low, supply of money is too high which triggers excessive demand for goods and services. Low interest rates in the short run boost production, but production bottlenecks occur later. So, in the long run only prices rise, and the economic situation deteriorate. On the contrary, too high interest rates reduce the flow of money to the economy and, lead to a demand shortage. Deflation may take place and hamper economic growth.
- e. Bangladesh Bank should regulate and supervise the financial system, safeguard the soundness of the financial system and absorb possible adverse shocks that could be detrimental to economic growth. It should improve the efficiency of the financial system and deepen financial intermediation to channel increasingly greater volume of financial resources to the economy at a lower interest rate.

## 6. Conclusion

One useful way to reduce the price of food is to maintain adequate strategic buffer stock of food that could be released to the poor and food insecure households through different food transfer programs targeted when needed. Considering the financial burden of subsidies in the context of limited fiscal space of the governments, targeted safety nets programs such as feeding programs for school children, food-for-work programs, open market sales, and guaranteed employment program for the poor and disadvantaged households especially during the lean seasons could be used to enhance food entitlements and stabilize the prices. Along with mitigating the inflationary impact on the poor through generating short-term employment opportunities and providing

access to transfer incomes in the rural areas, it is important to ensure food to the poor at subsidized prices also in the urban areas.

Since the demand of food by the poor is inelastic, the thrust of the macroeconomic policies should be on increasing domestic food production and stabilizing supply. Providing agriculture credit, supplying input, relaxing trade policies and providing timely market information may assist the producers. Improvement of institutional capacities and investments in agricultural research, technology, marketing, and post-harvest facilities are feasible ways of sustaining positive outcomes. Similarly, investment in rural infrastructure such as irrigation and rural transport can diminish the trend of higher food prices.

Keeping inflation within tolerable limits and ensuring highest sustainable growth in domestic output require continuous pursuit of supportive macroeconomic policies, growth in investment, measures to reduce power shortage, steps to remove infrastructure constraints and speedy implementation of structural, institutional, and financial sector reforms.

Moreover, the challenges of limited resources, particularly food and fuel have to be met. Further, the implementation of the reforms focusing on the improvement of the efficiency and productivity are essential to strengthen competitiveness, foster growth, and generate job opportunities. Moderating inflation and raising economic growth require painful tradeoffs, but this should not be excuse for delays in implementing corrective policy measures to the detriment of outlooks.

### Appendix

Development of M<sub>2</sub>, GDP, Inflation, and Unemployment in Bangladesh From 1991 to 2008

Year	M <sub>2</sub>		Inflation	GDP		Unemployment (%)
	Crore Taka)	Growth (%)		Crore Taka	Growth (%)	
1991	25004.4	---	8.31	110518	---	1.9
1992	28524.9	14.08	4.56	119542	8.17	----
1993	31535.6	10.55	2.73	125370	4.88	----
1994	36403.0	15.43	3.28	135412	8.01	----
1995	42212.3	15.96	8.87	152518	12.63	2.5
1996	45690.5	8.24	6.65	166324	9.05	----

1997	50627.5	10.80	2.52	180701	8.64	----
1998	55869.0	10.35	6.99	200177	10.78	----
1999	63026.3	12.81	8.91	219695	9.75	4.3
2000	74762.4	18.62	3.41	237086	7.92	----
2001	87174.1	16.60	1.58	253546	6.94	----
2002	98616.0	13.13	2.36	273201	7.75	4.3
2003	113994.4	15.60	5.14	300580	10.02	----
2004	129721.7	13.80	5.14	332973	10.78	----
2005	151446.6	16.75	6.48	370707	11.33	4.25
2006	180674.2	19.30	7.16	415728	12.14	----
2007	211504.4	17.06	7.20	472477	13.65	----
2008	248795.0	17.63	9.94	545822	15.52	----

**Note:** GDP: At Current Price, M<sub>2</sub>: Board Money

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