

# Monetary Policy in Bangladesh – Should We Go for Inflation Targeting?

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**Abstract:** In recent years, many developed countries and a growing number of emerging market as well as developing countries have adopted inflation targeting regimes. Bangladesh has abandoned its fixed exchange rate regime in 2003 and made itself as a preliminary practitioner of monetary targeting. It has clear monetary policy objective of price stability but it lacks credible and independent policies. This paper examines the issue of choice of appropriate monetary policy framework and justifies whether Bangladesh should continue monetary targeting framework or go for adopting inflation targeting regime. It recommends some policy implications for designing institutional setup that could lead to an optimal monetary policy choice.

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**Keywords:** Monetary policy, Nominal anchor, Exchange rate targeting, Monetary targeting, Inflation targeting, Transparency and credibility, Operating target, Intermediate target, Ultimate target.

## I. Introduction

In the past decade, many developed countries and some emerging market countries started implementing monetary policy framework of formal inflation targeting. Inflation targeting involves some elements, which made monetary policy regime more attractive. It has clear institutional commitment to achieve price stability as long run and low inflation as short run monetary policy goal and it can ensure increased transparency and accountability of central banks for attaining its inflation objectives. In the empirical study of three pioneer inflation targeting countries, New Zealand, Canada and United Kingdom, Bernanke et al (1999) found that inflation had remained within the intended range causing substantial reduction in the unemployment rate and higher growth of the economies (Mishkin, 2003. pp 522-24). Although there are some disadvantages of inflation targeting, it has become increasingly popular and promising policy framework in recent times. Consequently, a number of countries have already adopted this regime while some other countries are seriously

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considering the adoption. Now, the typical question is ‘Is Bangladesh as a developing country ready for Inflation Targeting?’ The answer lies in the choice of appropriate monetary policy framework subject to legal and operational constraints. This paper examines this issue and justifies whether Bangladesh should continue current monetary targeting framework or go for adopting inflation targeting regime. It recommends some policy implications for designing institutional setup that could lead to optimal monetary policy choice.

This paper is organized as follows. After discussing the historical evolution of monetary framework, it focuses on the institutional framework that supports the conduct of monetary policy in Bangladesh. Then, it addresses the position of Bangladesh in a clear and credible monetary policy framework. After examining the position it discusses about the choice of appropriate monetary policy strategy. Finally, it concludes with some policy implications and concluding remarks.

## **II. Evolution of Monetary Policy Framework**

### ***Exchange rate targeting: need for fixed nominal anchor***

Targeting exchange rates has a long history of fixing the value of the domestic currency to a commodity such as gold in a gold standard economy. When gold standard was abandoned, countries started to use the currency of the low inflation country like United States or Germany as a nominal anchor. In fixed exchange rate regimes such as crawling, currency peg, currency board, and dollarization, countries tie their inflation expectations to the inflation rate of the anchor to promote price stability. This system can directly contribute to keeping inflation under control. It also acts as an ‘automatic pilot’ tightening or loosening monetary policy when there is a tendency for devaluation or evaluation of the domestic currency and thus mitigates the problem of dynamic inconsistency with its clarity and simplicity. Industrialized countries like France and United Kingdom successfully used exchange rate targeting to lower inflation by tying their currencies to German mark. After pegging to German mark in 1990 United Kingdom became successful in lowering its inflation rate from 10

percent to 3 percent by 1992. Emerging market countries have also used exchange rate targeting as an effective means of reducing inflation quickly. Mexico for example managed to diminish inflation rate from the levels of above 100 percent to below 10 percent by using exchange rate target (Mishkin 2003, p 509). Despite the inherent advantages, it cannot provide independent monetary policy to respond domestic shocks and there is always the possibility for external shocks to transmit from anchor country to anchoring country. It can weaken the accountability of the policymakers because of the possibility of overvaluation or undervaluation of currency. It also leaves the currency open to speculative attacks. Following the disadvantages, countries then searched for other strategies for the conduct of monetary policy, one of which is monetary targeting. Before 2003 Bangladesh used to peg its local currency (Taka) with a currency basket of fifteen trading partners. Exchange rate was fixed within a band. In May 2003 Bangladesh abandoned the exchange rate targeting and moved to flexible exchange rate with managed floating

### ***Monetary Targeting: need for intermediate target***

In 1970s, several countries adopted monetary targeting by using monetary aggregates as an intermediate target. Monetary targets are classified into two targets; operating target and intermediate target. Intermediate targets are variables that affect the ultimate objective of monetary policy, but are not controlled by the central bank. They include various monetary aggregates such as money stock (M1 or M2) and long-term interest rates. Central bank uses operating targets, such as reserve money (RM) and short-term interest rates to influence the intermediate variables. Monetary instruments that affect operating targets are generally classified as either direct or indirect. Direct instruments functions according to the regulations that directly affect either interest rates or the volume of credit. Examples are credit and interest rate ceilings, direct lending, and changes in reserve requirements. Direct instruments become increasingly ineffective as the money and financial markets develop as well as fiscal dominance decreases. Indirect instruments are market-based instruments such as open market operations, and central bank lending policies with injection and absorption of liquidity (Khan 2003, pp. 3-4).

A major advantage of monetary targeting over exchange rate targeting is that it enables the central bank to adjust its monetary policy to cope with domestic shocks and output fluctuations. It can send immediate signals to the public and markets about monetary policy objectives, which in turn keep inflation expectations closer to low inflation. Thus, it is helping to constrain the monetary policymakers from falling into the dynamic inconsistency trap (Mishkin, 2003. p 521). Success of the monetary targeting depends on strong and reliable relationship between the goal variable (inflation and nominal income) and the targeted aggregates. Weak relationship cannot help fixing inflation expectations and ensuring accountability of the central bank. Unreliable relationship makes a difficult job for monetary authority to gain transparency. One of the main reasons for weak and unreliable relationship is presence of fiscal dominance, which frequently causes the deviation of monetary policy decisions from the targeted path. Other reason is that monetary policy may affect the rate of inflation with lags of uncertain duration and variable strength. It undermines the central bank's ability to control inflation on a period-by-period basis and ultimately makes the objectives of the monetary policy almost unattained.

### ***Monetary Policy in Bangladesh: Switch from exchange rate to monetary targeting***

The conduct of monetary policy of a central bank is governed by the ultimate objectives of price stability. In line with these predetermined objectives Bangladesh Bank, keeping in mind a very simple quantity theory  $MV = Py$ , sets a safe limit of monetary expansion, which is termed as the Intermediate target for monetary management. Annual target for growth of Money stock (M2) is derived on the basis of expected growth rate of real GDP, tolerable rate of inflation and estimated income elasticity of demand for money. Bangladesh bank aims at this intermediate target so that it can hit the ultimate target of low inflation or price stability. Before May 2003, Bangladesh was in exchange rate regime where fixed exchange rate with a band was considered as an anchor for monetary policy. Monetary aggregates were projected in line with exchange rate targeting. Now Bangladesh exchange rate is flexible with managed floating and monetary targeting becomes central function of monetary policy.

Bangladesh bank uses reserve money (RM) as the operating target in order to achieve the intermediate target of money supply (M2). The relationship between the operating target and Intermediate target is established in the following equation:

$$M2 = \mu * RM \quad (1)$$

Here  $\mu$  is the money multiplier. Assuming that money multiplier is fairly stable (Hossain, 1996 p. 111)

Bangladesh Bank tries to fulfill the demand for RM with its targeted supply equation

$$RM = NDA + NFA \quad (2)$$

Where NFA is net foreign assets and NDA is net domestic assets of Bangladesh Bank. NDA comprises credit to public and private sector, credit to banks and other net assets. Bangladesh Bank has nothing to do with NFA as exchange rate is no longer fixed. But it has monetary instruments that can affect operating target RM through the variation of NDA. Before the adoption of Financial Sector Reform Programmes (FSRP) in 1990, there were direct monetary instruments such as credit and interest rate ceilings, direct lending, and changes in reserve requirements. Now Bangladesh Bank uses indirect instruments such as open market operations (auction of government securities and treasury bills), discount rate, and central bank lending policies with injection (Repo) and absorption (Reverse Repo) of liquidity in order to achieve targeted RM. This in turn maintains the targeted M2 through money multiplier and influences the aggregate demand leading price stability and economic growth.

### ***Inflation Targeting: need for ultimate target***

To overcome the limitations of the exchange rate and monetary targeting most of the developed and some of the developing countries in the world are now implementing inflation targeting as an alternative monetary policy framework. Inflation targeting sets price stability as the sole objective and ultimate target of monetary policy and assign the responsibility of achieving it to an independent central bank. There is no need for intermediate target of monetary policy in this framework. Inflation targeting involves several attractive elements, which make it distinctive and acceptable. It has *clear* institutional commitment to achieve price stability as long run and low inflation as short run monetary

policy goal and it can ensure increased *transparency* and *accountability* of central banks for attaining its inflation objectives. To ensure *credibility* it takes into account many variables for deciding the setting of policy instruments not just monetary aggregates and exchange rate (Mishkin, 2000. p 105).

In Inflation targeting regime policymakers solve a standard optimal control problem, choosing the path of the price level that minimizes a quadratic loss function (1) subject to the constraints imposed by the linear structure of the economy (Cecchetti and Kim 2003).

$$L = E \left\{ \sum_t \beta^t \left[ \lambda (p_t - p_t^*)^2 + (1 - \lambda) (y_t - y_t^*)^2 \right] \right\} \quad (3)$$

$$L = E \left\{ \sum_t \beta^t \left[ \lambda p_t^2 + (1 - \lambda) y_t^2 \right] \right\} \quad (4)$$

Where,  $p_t$  is the (log) actual price level,  $p_t^*$  is the targeted price level,  $y_t$  is the (log) actual output,  $y_t^*$  is desired output level,  $\lambda$  is the degree to which the central bank prefers price stability to output stability, and  $\beta^t$  is the time discount factor.  $p_t$  and  $y_t$  in the equation (4) represent price and output variability respectively. Assuming the Neo-classical Phillips curve

$$y_t = \rho y_{t-1} + \alpha (p_t - p_t^e) + \epsilon_t \quad (5)$$

where  $p_t^e$  is the expectation of price at time  $t$ ,  $\rho$  and  $\alpha$  are constants and  $\epsilon_t$  is an i.i.d shock with variance  $\sigma_\epsilon^2$ , the job of the Inflation targeting central bank is to find a path for the price level  $p_t$  that minimizes the loss function (4) subject to (5).

The successful implementation of Inflation targeting requires some preconditions. First, price stability should be the primary goal and inflation should be the ultimate target of monetary policy. It rules out the possibility of targeting other variables including exchange rate and monetary aggregates. Second, inflation targeting regime should operate under independent central bank. Fiscal dominance undermines the ability of the central bank to achieve the inflation target. Third, accountability and

transparency of the central bank is essential to increase financial discipline and to enhance credibility of the central bank in the conduct of monetary policy. Fourth, operational framework of the central bank is required to model and forecast inflation and to use indirect instruments to achieve the target (Khan 2003, pp.10-11).

With all attractive elements of clarity, transparency and accountability, inflation targeting has several advantages as a medium term strategy for monetary policy. In contrast to monetary targeting, it does not depend on the relationship between money and inflation. Rather it uses all available information to determine the best settings for the instruments of monetary policy. Moreover, since the source of dynamic inconsistency is often found in political pressure on the central bank to undertake overly expansionary monetary policy, inflation targeting has the advantage of saying what central bank can do in the long run (i.e. control inflation) and what it cannot do (i.e. raise output growth or lower unemployment) through monetary policy (Mishkin, 2000. p 105). Barancke et al have investigated inflation targeting countries with special attention to three pioneer inflation targeting countries such as New Zealand, Canada and United Kingdom. New Zealand, which started inflation targeting in 1990, was very much successful in reducing inflation to desired level. Since 1992 its growth rate has generally been very high, with some years exceeding 5 percent and unemployment has come down significantly. Canadian inflation has also fallen dramatically since the adoption of inflation targets in 1991. But this decline was not without cost as unemployment remained above the 10 percent level from 1991 to 1994 and it fell below 10 percent. Although inflation was falling before the adoption of inflation targeting in United Kingdom in 1992, its economy has been strong causing a substantial reduction in the unemployment rate since the adoption (Barancke et al, 1999).

There are some disadvantages that involve in inflation targeting. Inflation targeting regime is unable to send immediate signal to economic agents about the stance of monetary policy because inflation is hard to control and because there are lags in monetary instruments and inflation. Thus, central bank can hardly produce accountability. Inflation targeting cannot ensure fiscal discipline or prevent fiscal

dominance. Government can still pursue irresponsible fiscal policy and persistent fiscal deficit can cause high inflation even in the presence of inflation targeting. The exchange rate flexibility required by inflation targeting might cause financial instability. An important criticism of inflation targeting is that it has the potential to increase output instability that may lower economic growth.

Despite there are some disadvantages of inflation targeting, it has become increasingly popular and promising policy framework in recent times. Consequently, a number of countries have already adopted and some other countries are seriously considering the adoption of this regime. Now, the typical question is ‘Is Bangladesh as a developing country ready for Inflation targeting?’ The answer lies in the choice of appropriate monetary policy framework subject to legal and operational constraints. In the next sections, we will discuss about the legal framework of Bangladesh and the status of Bangladesh with respect to clarity and credibility so that we can justify the choice of appropriate monetary policy regime.

### **III. Institutional Framework of Bangladesh Bank**

#### ***Legal framework***

The legal framework of Bangladesh Bank is supported by The Bangladesh Bank Order 1972.

Functions and objectives of the Bank are reflected in the preamble as:

“Where it is necessary to establish a central bank in Bangladesh to regulate the issue of currency and the keeping of reserves and manage the monetary and credit system of Bangladesh with a view to stabilizing domestic monetary value; preserving the par value of the Bangladesh Taka; promoting and maintaining a high level of production, employment and income in Bangladesh; and fostering growth and development of country’s productive resources in the best national interest.” (BBO, 1972)

According to this declaration, Bangladesh Bank had to conduct its monetary policy with a set of objectives without placing emphasis on any single or prime objective. In fact, there was no single word of ‘monetary policy’ written in any of articles or clauses in the Order. Bangladesh Bank (Amendment) Act, 2003 amended Bangladesh Bank Order in 2003 where the objective of monetary policy was clear in the preamble as:



“Where it is necessary to establish a central bank in Bangladesh to manage the monetary and credit system of Bangladesh with a view to stabilizing domestic monetary value and maintaining a competitive external value of the Bangladesh Taka towards fostering growth and development of country’s productive resources in the best national interest.” (BBO, 2003)

In this amendment, monetary policy appeared for the first time as main function of the Bank and it is included in article 7A under Chapter II. In that article, main functions of the Bank are mentioned clearly and in short, these are: to formulate and implement monetary and exchange rate policies, and to regulate and supervise banking companies and financial institutions.

Bangladesh Bank is now reportable to the Co-ordination Council instead of the Ministry of Finance but chairperson of the Co-ordination Council is Finance Minister himself. The other members are Minister for Commerce, Governor of Bangladesh Bank, two Secretaries from Finance Ministry and Member Programming from Planning Commission. Article 9A(2) of Chapter II defines the functions of the Co-ordination Council and in short these are: a) to co-ordinate macroeconomic framework including fiscal, monetary and exchange rate strategies and policies; b) to ensure consistency among macroeconomic targets of growth, inflation and fiscal, monetary and external accounts; c) to determine the extent of public sector borrowing from the banking system; d) to revise the limits and targets with respect to the latest developments in the economy; e) to consider the revision of the government borrowing from time to time. Clause (a) and (b) ensure the true coordination activities but rest of the clauses generates fiscal dominance.

### ***Accountability, Transparency and Credibility***

Bangladesh Bank is accountable only to Co-ordination Council for its monetary and exchange rate policy. It arranges monetary aggregates data and an assessment of the impact of economic policies of government on monetary aggregates and balance of payments to place before the council for accountability requirement but it publishes in print or on website with clear constrains. Article 21 under chapter III is the only article in Bangladesh bank Order that describes BB shall make public time to time the standard discount and rediscount rates. Explicit accountability of the monetary policy framework helps smooth formation of inflation expectations among economic agents in a credible

manner. Regular disclosure of monetary policy performance through press release would enhance transparency and credibility of the central bank. However, the legal framework of Bangladesh Bank does not support it. Co-ordination Council acts like a Monetary Policy Committee but it restricts the monetary policy independence and generates fiscal bias. While Ministry of Finance and Ministry of Commerce shall have to produce before the Council, the impact of their own policies on Macroeconomic situation, Bangladesh Bank has to ensure that the macroeconomic framework coordinated by the Council is reflected in its policies. Moreover, it has to place before the Council an assessment report of the impact of government policies on monetary policy not the opposite way as the other two Ministries shall have to do. This hampers the effort of gaining the credibility as well as the independence of the central bank in the conduct of monetary policy. In the next section we will see the importance of gaining transparency and credibility for efficient monetary policy framework.

#### **IV. Monetary Framework with Clarity and Credibility**

##### ***Clarity and credibility as a measure of performance***

Central bank can improve its credibility by clear commitments and transparent activities in conducting monetary policy. The more credible and accountable the central bank the lower the output cost of reducing inflation. Inflation targeting regime can ensure transparency and accountability of the central bank in a credible manner. William A Allen describes British experience of transparency and accountability ensured by the inflation targeting as follows: a) The Bank of England publishes *inflation report* quarterly. b) Decisions taken in the Monetary Policy Committee (MPC) meetings are reported and discussed in the media and in financial markets. c) Members of the Monetary Policy Committee are accountable to the Treasury Select Committee of the House of Commons. d) Governor of has to write an open letter to the Chancellor of the Exchequer explaining reasons for inflation target breach and actions MPC is taking to correct it. e) MPC gathers information from business people and explains Bank's policies to audiences across the country (Allen A William, 1999).

Monetary policy regimes can be classified into groups based on clear and credible commitment to monetary policy objective of low inflation. Carare and Stone (2003) have examined 42 countries with flexible exchange rate and classified them into three inflation targeting groups. They argued that countries with exchange rate as well as monetary targeting can also be included in this classification as they are committed to low inflation.

***Eclectic Inflation targeting*** (EIT) countries have so much credibility that they can maintain low and stable inflation without full transparency and accountability. Their high degree of financial stability affords them the flexibility to achieve the objective of output stabilization as well as price stability. Highly developed countries like United States and Japan are practicing this regime.

***Full-fledged inflation targeting*** (FFIT) countries have medium to high level of credibility, clearly commit to their inflation target and institutionalized this commitment through transparent and accountable central bank in conducting monetary policy. Many industrialized countries (such as United Kingdom, Australia, Canada, New Zealand) and some emerging market countries (such as Korea, Thailand, South Africa, Israel) are practicing this regime.

***Inflation Targeting lite*** (ITL) countries announce a low inflation objective without a clear target but their low credibility cannot maintain price stability. Vulnerability to large economic shocks, financial instability and weak institutional framework are the reasons for their relatively low credibility. They are practicing either exchange rate targeting or monetary targeting to achieve price stability. They are all developing countries including Bangladesh.

Clarity is gauged by the public announcement of inflation target and institutional arrangement in support of transparent and accountable commitment to that target. On the other hand credibility is measured by the proxy of actual inflation outturn and market ratings of long-term government debt.

They found clear distinction of credibility in three regimes. The closer towards the inflation targeting regime the higher is the degree of credibility among the countries.

**Table 1: Credibility comparison of the targeting regimes**

Regimes	Inflation January 1999-May 2002	Debt Rankings*
EIT	1.2	2.0
FFIT	4.4	7.2
Industrial countries	2.9	2.9
Emerging market countries	5.4	10.0
ITL	10.0	14.7

\* =Standard and Poor's long-term government debt ratings for 2001.

Source: Carare Alina and Mark R Stone (2003). All figures are in country average.

### ***Inflation targeting regime switches***

Monetary policy can support long run economic growth through price stability and financial soundness. The welfare maximizing combination of these two objectives in the policy framework depends on a country's level of credibility. The above conceptual framework suggests that switching from FFIT to EIT is a matter of flexibility with respect to other objectives. But ITL countries like Bangladesh should gradually earn higher degree of clarity and credibility in the conduct monetary policy to move towards FFIT. Table 2 shows that developed and emerging market countries are successful in maintaining low inflation after adopting full-fledged inflation targeting regime.

**Table 2: Inflation comparison of the monetary policy regimes**

Countries	1990	1995	2000	2001	2002	2003
<b>Developed</b>						
Canada (1991)	4.71	2.19	2.77	2.50	2.24	2.77
New Zealand (1989)	6.04	3.75	2.67	2.60	2.73	1.71
United Kingdom (1992)	9.53	3.41	2.88	1.80	1.67	2.90
<b>Emerging Market Countries</b>						
Korea (2000)	8.58	4.49	2.25	4.10	2.69	3.55
South Africa (2000)	14.29	8.53	5.37	5.70	9.18	5.81
Thailand (2000)	5.93	5.69	1.52	1.70	0.59	1.76
<b>Developing (SAARC)</b>						
Bangladesh	8.11	5.79	2.25	2.00	3.33	5.69
India	8.93	10.25	4.06	3.70	4.34	3.88
Pakistan	9.05	12.36	4.38	3.10	3.30	2.91

Figures in the parentheses indicate the year of adoption of full-fledged inflation targeting (FFIT) regime. SAARC countries are in monetary targeting regime. Source: International Financial Statistics, June 1997 and September 2004, IMF.

After experiencing financial crisis that hit East Asia in 1997, Korea and Thailand adopted inflation targeting framework to tackle the possibility of further crisis successfully. Recently, four major SAARC countries including Bangladesh have entered into the regime of monetary targeting to mark a step forward towards the full-fledged inflation targeting framework. Although they are successful in managing inflation, their monetary policies are not transparent and credible enough due to fiscal dominance and lack of central bank independence. In the previous sections we have seen how clarity and credibility criterion makes the inflation targeting more attractive tool for monetary policy. In the next section we will examine the possibility of earning credibility and making room for inflation targeting within the institutional framework of Bangladesh.

## **V. Choice of Monetary Policy Strategy**

### ***Should Bangladesh continue monetary targeting?***

Under monetary targeting, money growth is targeted in order to control inflation on the assumption that money growth is the major, if not the sole, determinant of inflation. Before taking other strategies into consideration let us examine whether monetary targeting has a potential effectiveness in reducing inflation in Bangladesh. Potential effectiveness of monetary targeting in Bangladesh depends on three factors:

- 1) Stability of the money demand function
- 2) Relationship between money growth and inflation and
- 3) Sound exchange rate system for financial stability.

With the help of error correction modeling Hossain found a cointegrating relationship among real money, real output and the deposit rate of interest (Hossain 2003). The relationship was stronger in the case of broad money. His overall result suggests that there exists a stable money demand function for Bangladesh. In other study he investigated the stability of money demand function by applying the methods cointegration and error correction (Hossain 1996). In that study he found that even though the monetary authority of Bangladesh did not conduct monetary policy by thoroughly investigating the

money demand behaviour, it correctly assumed that the broad money demand function was stable. These results support his earlier study (Hossain 1995: pp 127-45) where he estimated a short run money demand model for Bangladesh for the period 1974:1 to 1985:4 (two sample periods 1974:1 to 1979:4 and 1980:1 to 1985:4) and his dynamic simulation results showed that estimated money demand function was quite stable.

Dwyer argued that inflation is always a monetary phenomenon in the United States. With a simple Vector Autoregression (VAR) model he showed that monetary aggregates is still a useful and leading indicator of the US inflation and questioned the act of ignoring the role of monetary aggregates in the formulation of monetary policy in USA in 1980s (Dwyer, 1999). As USA is an *Eclectic Inflation Targeting* country with high credibility and Bangladesh is a country of *Inflation Targeting Lite* we cannot simply follow him in opposing the neglect of monetary target in this country in future. But we can investigate Bangladesh case following his idea. The question is 'is Inflation a monetary phenomenon in Bangladesh?' Hossain has investigated the presence of long-term relationship between the stock of money supply and the price level. His cointegration and error correction test results show that there was a significant relationship among them. He also conducted the Granger Causality test to determine the direction of causality between money supply growth and inflation and found that there was a money supply growth to inflation causality but not the reverse. This result justifies his earlier investigation of the sources of Bangladesh famine in 1974 to prove the famous dictum of Milton Friedman that 'inflation is always and everywhere a monetary phenomenon' (Hossain 1996, 1999, 2003).

With the help of error correction modeling Hossain also shows that although devaluation may have short-term effect on inflation, it is not an independent source of inflation rather it is inflation caused by money supply that leads to devaluation. He concludes with the idea that high degree of volatility of exchange rate will not necessarily lead to inflation even if a sharp depreciation under the flexible exchange rate system (Hossain, 2002). As a new exchange rate policy, flexible exchange system has

not created any financial instability in Bangladesh so far. Mishkin pointed out that the success of monetary targeting depends on strong and reliable relationship between goal variable and target variable. As Hossain has found the existence of that type of relationship for Bangladesh in his various studies we can conclude that monetary targeting is feasible in Bangladesh provided that monetary authority has effective control over the money supply. To achieve such a control some institutional and policy reforms are necessary (Appendix-1).

### ***Should Bangladesh go for Inflation Targeting?***

In the previous sections we have seen that presence of higher degree of clarity and credibility property and lower degree of dynamic inconsistency has made the inflation targeting framework more sophisticated and attractive than others. We have also seen that the institutional framework of Bangladesh can only provide first precondition of price stability and exchange rate flexibility of the inflation targeting regime. The second precondition of central bank independence is hampered by lack of monetary independence and presence of fiscal bias in the Co-ordination Council. Fiscal dominance undermines the ability of the central bank to achieve the inflation target and large fiscal deficit can generate persistent high inflation. Shifting of central bank's accountability from the Ministry of Finance to the Coordination Council has only provided very limited autonomy to the bank. The third condition of accountability and transparency of the central bank is almost absent even in the amended version of the Bangladesh Bank Order. Fourth, operational framework of the central bank to model and forecast inflation is not sophisticated enough to implement highly technical inflation targeting framework. Thus, it is not possible to implement the monetary policy based on inflation targeting without sufficient infrastructure development (Schaechter Andrea et al, 2000 p 35). Along with the higher degree of central bank autonomy, technical knowhow in the field of econometric model building and computer infrastructure development is a prime necessity. At present, Bangladesh Bank is going under Central Bank Strengthening Project (CBSP), which may strengthen its operational framework to get ready for inflation targeting framework. By fulfilling the first and then taking the fourth precondition in hand, Bangladesh is half ready to go for Inflation targeting regime. Two other

preconditions are related to the legal framework of the bank and Government's commitment towards inflation objective is the only way.

### ***Monetary Targeting Vs Inflation Targeting***

Following the abandonment of monetary targeting by most of the developed countries, some emerging market countries have adopted inflation targeting monetary policy regime. Few numbers of developing countries have either adopted or taken a future plan for adopting inflation targeting monetary policy regime. Is it a fad or necessity? The answer is: premature adoption of inflation targeting can be called 'whimsical' but preparing background for switching from *inflation targeting lite* to *full-fledged inflation targeting* framework is a necessity. Developed countries have decade long experience (beginning in early 1990s) of inflation targeting. On the other hand, emerging market countries or some other developing countries have started it in late 90s or early 2000s. Thus having the idea socio-economic difference among countries, one cannot simply draw a conclusion of replicating inflation targeting regime in developing countries on the basis of inflation management experience of developed countries. The necessity of inflation targeting framework lies in its clarity and credibility criteria. Other regimes cannot provide transparent and credible commitment of low inflation due to fiscal dominance and lack of instrument autonomy of central bank. As general people are more concern about inflation rather than monetary aggregates, formation of inflation expectations among them could fall in *time inconsistency trap*. Consistent formation of expectation (i.e. minimum possible deviation of expected from actual inflation) depends on people's trust in policy makers action. Without consistent inflation expectations central bank cannot manage inflation properly. From the welfare point of view, earning credibility towards low inflation objective as well as high economic growth requires step by step institutional reforms. Bangladesh has already fulfilled most of the basic requirements for monetary targeting but only few of preliminary requirements for inflation targeting (Appendix-1 & 2). At present institutional and financial system do not support implementing inflation targeting regime in Bangladesh. As reforms are undergoing, Bangladesh can think of adopting inflation targeting in the near future and continue monetary targeting in the meantime.



## **VI. Conclusion and policy implications**

This paper has investigated the choice of appropriate monetary policy regime for Bangladesh. It has argued that Bangladesh can continue monetary targeting regime but only after fulfilling some requirements described in Appendix-1. At the same time it recommended that Bangladesh could go for Inflation targeting regime if some preconditions are fulfilled in the near future (Appendix-2). These requirements or preconditions are mostly related to the legal framework of the central bank and highly depended on Government's commitment towards inflation objective. Higher degree of central bank autonomy with independent policy instruments is necessary element for efficient monetary policy framework whether it is monetary targeting or inflation targeting regime. This is possible only by eliminating fiscal dominance or cutting free access of government in central bank credit and restricting Coordination Council from being fiscal biased. A powerful Monetary Policy Committee should be formed in the central bank. It will report the Co-ordination Council about the current monetary policy stance in a similar way the Ministry of Finance and Ministry of Commerce shall have to report their own policies. The function of the Co-ordination Council shall be just coordinating the macroeconomic policies formulated by ministries and monetary authority. In article 9A of chapter II of the Bangladesh Bank Order 1972 (BBO, 2003) only one clause (2: a, b) is coordinating in nature. Rest of the clauses has the possibility to generate fiscal dominance that could undermine the Bangladesh Bank's instrument independence. To ensure central bank autonomy these clauses should be eliminated. It is Monetary Policy Committee in the central bank instead of Co-ordination Council that should decide how much government debt central bank can monetize and to what extent it cannot. In order to bring the stability of the financial sector money and capital markets should be developed along with the secondary market for government securities. Under the Central Bank Strengthening Project (CBSP), Bangladesh Bank should undertake the information inclusive organizational reforms in order to achieve clear and credible central bank status. In order to forecast future inflation rate, inflation targeting regime requires rigorous and transparent econometric models for estimating expected inflation, which is consistent with future economic growth potential. In Bangladesh, such models

would be helpful for policymakers who intend to work for the transformation of monetary policy from monetary targeting to inflation targeting.

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**Table A: Bangladesh: checklist of requirements for monetary targeting**

Requirements	Condition in Bangladesh	Actions needed
Existence of a stable money demand function.	Broad money demand is largely stable.	The stability of the money demand function needs to be examined on regular basis.
Market based exchange rate regime.	Managed floating exchange rate system.	Exchange rate should be more flexible.
Market based interest rates.	Lower competition due to oligopolistic banking structure has reduced flexibility of interest rates.	Create competitive banking structure and reduce explicit and implicit control over interest rates to increase their flexibility.
Greater use of open market operations for monetary control.	Open market operations are in use but limited in nature and scope.	Develop money and capital markets including secondary markets.
Restricted access of government to central bank credit.	Automatic access to of government to central bank.	Limit or restrict government access to central bank credit through constructional reforms.
Inflation as the overriding objective of monetary policy with clear public accountability.	Price stability is the main objective of monetary policy but there is very low public announcement.	Objective should be well communicated with the public.

Source: Author's adaptation from Hossain et al, 2003.

**Table B: Bangladesh: checklist of requirements for inflation targeting**

Requirements	Condition in Bangladesh	Actions needed
Price stability is the primary goal and inflation is the ultimate target of the monetary policy.	Price stability is the main objective of monetary policy but there is no specific target.	There should be specific and publicly communicated inflation target.
Autonomy and independence of the central bank. No fiscal dominance.	The Bangladesh Bank has limited policy autonomy. Fiscal policy dominates monetary policy.	Need to make the Bangladesh Bank autonomous. Reduce fiscal dominance to ensure its instrument independence.
Accountability and transparency of the central bank to enhance the credibility of the monetary policy.	Limited accountability and transparency of the central bank in the conduct of monetary policy.	Need to enhance accountability and transparency of the central bank to increase credibility in the conduct of monetary policy.
Presence of technical and institutional capacity to model and forecast inflation.	Technical and institutional capacity to model and forecast inflation is limited.	Enhance technical and institutional capacity. Computerization of financial system is required.

Source: Author's adaptation from Hossain et al, 2003.

Monetary targeting starts with the very simple quantity theory of money

$$M_t V_t = P_t Y_t \quad (1)$$

$M_t$  is the nominal money,  $V_t$  is the income velocity of money,  $P_t$  is the price level, and  $Y_t$  is the real income. Taking logs in (1) and rearranging yields

$$p_t = m_t + v_t - y_t \quad (2)$$

The lowercase letters denote the natural logarithms of the variables represented by the corresponding uppercase letters. By definition, the income velocity of money is equal to nominal income divided by nominal money. Hence,

$$v_t = \ln(V_t) = \ln(P_t Y_t / M_t) = y_t - \ln(M_t / P_t) \quad (3)$$

Substituting equation (3) into equation (2) yields

$$p_t = m_t - \ln(M_t / P_t) \quad (4)$$

As monetary theory indicates that in the long run nominal money is determined by supply while real money is determined by demand, equation (4) can be written as:

$$p_t = m_t^s - (m/p)^d_t \quad (5)$$

Where  $m_t^s$  is the log of the nominal money supply and  $(m/p)^d_t$  is the log of real money demand. Equation (5) shows how price level can be determined by the interaction of money supply and money demand. Thus, price stability can be achieved by targeting money supply if money demand function  $(m/p)^d_t = f(y, i)$  remains stable. As money supply  $M_2$  is exogenous, it is considered as intermediate target. This target can be achieved by targeting central bank's instrument variables such as reserve money (RM) which is related to  $M_2$  through following equation.

$$M_2 = \mu \cdot RM \quad (6)$$

Here  $\mu$  is the money multiplier. Assuming a stable money multiplier, equation (5) and (6) show that instrument variable targeting can maintain  $M_2$  at certain level and ensure price stability, the main monetary policy objective.

In the Inflation targeting regime policymakers solve a standard optimal control problem, choosing the path of the price level that minimizes a quadratic loss function (1) subject to the constraints imposed by the linear structure of the economy (Cecchetti and Kim 2003).

$$L = E \left\{ \sum_t \beta^t [\lambda (p_t - p_t^*)^2 + (1 - \lambda)(y_t - y_t^*)^2] \right\} \quad (1)$$

Where,  $p_t$  is the (log) actual price level,  $p_t^*$  is the targeted price level,  $y_t$  is the (log) actual output,  $y_t^*$  is desired output level,  $\lambda$  is the degree to which the central bank prefers price stability to output stability, and  $\beta$  is the time discount factor.

Targeting regimes differ depending on how the target  $p_t^*$  is defined. There are three types of targeting 1) inflation rate targeting, 2) price level targeting and 3) hybrid targeting. Inflation rate targeting requires targeting of inflation rate  $\pi^*$ , an increment over past period realized price level  $p_{t-1}$ .

$$p_t^* = p_{t-1} + \pi^* \quad (2)$$

Whereas price level targeting targets both inflation rate  $\pi^*$  and past period target  $p_{t-1}^*$ .

$$p_t^* = p_{t-1}^* + \pi^* \quad (3)$$

Hybrid targeting is a weighted average of inflation rate and price level targeting.

$$\begin{aligned} p_t^* &= \eta(p_{t-1} + \pi^*) + (1 - \eta)(p_{t-1}^* + \pi^*) \\ &= \eta p_{t-1} + (1 - \eta) p_{t-1}^* + \pi^* \end{aligned} \quad (4)$$

Here  $\eta$  is the weight on inflation targeting. Notice that  $\eta=1$  and  $\eta=0$  are the special case of inflation rate and price level targeting. Substituting (4) into the loss function (1), and normalizing various constants and initial conditions to zero, we get

$$L = E \left\{ \sum_t \beta^t [\lambda (p_t - \eta p_{t-1} + (1 - \eta) p_{t-1}^*)^2 + (1 - \lambda) y_t^2] \right\} \quad (5)$$

Normalization implies that  $y$  is now the output gap, and the price path now measured as the deviation from the inflation objective  $\pi^*$ . Assuming the Neo-classical Phillips curve

$$y_t = \rho y_{t-1} + \alpha(p_t - p_t^e) + \epsilon_t \quad (6)$$

Where  $p_t^e$  is the expectation of  $p$  at time  $t$ ,  $\rho$  and  $\alpha$  are constants and  $\epsilon_t$  is an i.i.d shock with variance  $\sigma^2_\epsilon$ . The job of the Inflation targeting central bank is to find a path for the price level  $p_t$  that minimizes the loss function (5) subject to (6).