

Bank of Ghana



Curriculum Vitae

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Monetary Management in Ghana

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**A Paper Presented at the Conference on
Monetary Policy Frameworks in Africa**

Pretoria, South Africa

September 17-19, 2001

Abstract

Monetary Management is critical in maintaining low rates of inflation and ensuring sustainable growth in developing countries. The focus of this presentation is to look at the various developmental stages of monetary management in the conduct of monetary policy in Ghana. The presentation will elucidate the various strategies of monetary management since the inception of the financial sector reforms in Ghana, highlighting the types of targets and instruments of monetary management that have been employed as well as their impact on achieving the mission of the monetary authorities in Ghana.

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SECTION 1

Introduction

Since the launch of the Economic Recovery Programme (ERP) in 1983, monetary policy in Ghana has changed considerably in line with changes in the financial system.

Whilst the objective aspect of monetary policy – price stability – has remained basically unchanged, there have been substantial changes, especially with regard to the instruments used. The instruments of monetary policy have been improved and more indirect and market based instruments have been developed. With respect to policy targets, although the intermediate target continues to be broad money supply, the definition of the money supply has been adjusted to take account of new financial assets that resulted from the liberalization and innovation process and functioned as close substitutes for the monetary assets.

The results of the various monetary policy measures pursued in Ghana since the ERP/SAP have been mixed. The main constraint on monetary policy for the most part of the review period has been the need to accommodate unplanned fiscal requirements. Also since 1994, monetary management has been additionally burdened by the large liquidity injections into the economy concentrated in the last quarter of the year, mainly through the foreign loan inflow earmarked for the purchase of cocoa. This is aggravated by fiscal pressures which make monetary management in the last quarter of every year very complicated.

Objectives of monetary policy

The overriding goal of monetary policy in Ghana is price stability, although this is not stated explicitly in the Bank of Ghana (BOG) law². The price stability objective has become pronounced since 1996 when the BOG refocused its mission and adopted a Mission Statement as follows: "to pursue sound monetary and financial policies aimed at price stability so as to create an enabling macroeconomic environment for the promotion of sustainable economic growth." The refocusing of the Bank's mission was the result of a high-level round table conference held in Akosombo in 1996 on Inflation in Ghana and how to manage it, attended by many internationally recognised experts including Michael Bruno.

Section 2

Strategy for monetary management

Monetary targeting

The Bank of Ghana's strategy for inflation management is based on the view that inflation is mainly a monetary phenomenon. Several studies of the Ghanaian economy have established that a significant proportion of the variation in prices is explained by movements in monetary aggregates (See Ewusi (1997), Kwakye, Addison & Wampah (1996) Lawson ((1996)). Targeting money supply growth would therefore be an appropriate method of targeting inflation in the Ghanaian economy.

The programming framework used by the Bank is derived from the quantity theory equation that relates the rate of monetary growth to inflation given a constant velocity of money and full employment. The growth and inflation targets for a particular year are based on the financial programme determined in consultation with the Ministry of Finance (MOF). The quantity theory of money adopts a demand management approach where prices adjust to movements in money supply. It is assumed that velocity (v) can be reliably predicted (outside the model).

Types of target

Within the Bank of Ghana's monetary management framework, there are basically three targets: the ultimate or final target, the intermediate target and the operating target.

As indicated earlier, the ultimate goal of the central bank is to maintain price stability and thus the target is usually set in terms of inflation rates.

The intermediate target is money supply, which is derived from the quantity theory identity. The particular monetary aggregate used varies from country to country, and in Ghana has evolved over the years. In Ghana, M1 was used as the intermediate target for the greater part of the period prior to 1983. However, as quasi money (Time and Savings Deposits) grew and became increasingly a near-perfect substitute for demand deposits, BOG switched to using M2 as the intermediate target. Finally, in 1997, the central bank started using the broader target of M2+, defined as the sum of M2 and foreign currency deposits. This was in response to the rapid growth of foreign currency deposits on the balance sheets of commercial banks and the need to monitor them as a potential source of demand and therefore inflation.

In a system of direct controls, the central bank may be able to control money supply directly. For example, in the Ghanaian case, BOG was able to limit commercial banks to specific credit ceilings, thus ensuring that the money supply target was met. In a liberalised system of indirect controls, however, the central bank must operate through another variable over which it has greater control. This variable, called the operating target must be closely related to the intermediate target such that, attaining this target would translate into achieving the intermediate target.

The main operating targets used by central banks are the net domestic assets of the central bank (NDA_{CB}) and Reserve Money (RM). In Ghana, NDA_{CB} was initially used. In the financial programming framework, a floor is usually set for the Net Foreign Assets of the central bank (NFA_{CB}). Earlier in the reform period, NFA was not considered a major source of liquidity injection since during this period, export earnings and bilateral/multilateral flows were low. The major source of injection was net claims on Government and the private sector. Thus, targeting (NDA_{CB}) was considered appropriate in restraining Government as well as commercial bank credit to the private sector.

When exports recovered and the international community confidence in Ghana was restored, foreign inflows became a major source of injection and the sole concentration on (NDA_{CB}) became inadequate. To deal with the situation, the Central Bank shifted to the use of RM as its operating target. RM is related to the intermediate target (M2) through the money multiplier (m) as follows:

$$M2 = m*(RM)$$

Thus, if m can be projected fairly accurately or is stable, then the M2 target can be achieved by keeping to the corresponding RM level. RM can be influenced through open market operations (OMO) or foreign exchange reserve management (FEMO). The relationship can be written as follows:

$$M2 = NFA_{CB} + NDA_{CB}$$

and $NDA_{CB} = NCG_{CB} + OIN_{CB}$

Where NFA_{CB} is the Net foreign assets of the central bank
 NDA_{CB} is the net domestic assets for the central bank
 NCG_{CB} is net credit to government by the central bank
 $NIBP_{CB}$ is net indebtedness of the central bank to commercial banks and the public
 OIN_{CB} is other items (**net**) of the central bank.

Open market sales (or primary issues) of government paper or central bank bills will have contractionary effects on NCG_{CB} and $NIBP_{CB}$, while purchases will have the opposite effect. Similarly, central bank sales of foreign exchange will reduce NFA_{CB} , while purchases will expand it. Thus OMO and FEMO can be used by the central bank to achieve a desired level of reserve money. As is clear from above, the assumption of a stable multiplier forms the basis of BOG's monetary management strategy, since m is the link between reserve money and money supply. If m is unstable or cannot

be reliably predicted, then the M2 target cannot be achieved even if the RM target is achieved.

It may be noted that under the new PRGF agreed upon with the IMF in June 2001, the performance criterion for the monetary sector has been shifted from reserve money to the NDA. This stems from the fact that inflationary pressures in the Ghanaian economy in 2000 emanated mainly from domestic credit creation, hence the need to monitor the net domestic assets of the central bank.

Instruments of monetary management

Until 1987, the main instruments of monetary management were direct controls in the form of ceilings on commercial bank credit to the private sector and regulation of interest rates. The ceilings on commercial bank credit were both bank and sector specific. The Central Bank also regulated interest rates by stipulating floors and ceilings for deposit and lending rates respectively. High reserve requirements were also imposed during this period.

These controls had their own attractions, the most obvious one being the ease of implementation. All the Central Bank had to do was to determine the money supply growth for the year based on economic growth and inflation objectives; determine the credit growth that would be consistent with the money supply growth; distribute this credit growth among banks based on certain criteria, and sit back to monitor compliance of the banks to the guidelines. Thus, at the beginning of each year, BOG sent out general policy guidelines as well as bank specific ones. The general guidelines included interest rate regulations and distribution of credit by economic sectors (agriculture, industry, etc.) The specific guidelines stipulated ceilings for the total credit allowed each bank. Penalties were applied by the Banking Supervision Department (BSD) on non-conforming banks. Monetary management was therefore simple and straightforward.

This system of monetary management, however, had several disadvantages. First, high unremunerated reverse requirements, coupled with credit ceilings led to the accumulation of a large pool excess liquidity in the banking system. Since there was no avenue for investing these funds, the banks had no incentives for mobilisation of savings. Furthermore, the ceilings on lending rates were often kept low to keep the cost of borrowing especially to Government low. Thus, interest rates were generally negative in real terms, a further disincentive to savings. The system of direct controls, therefore, contributed to the deterioration in the banking system by increasing transaction costs, discouraging financial intermediation and leading to misallocation of resources.

The instruments currently used include reserve requirements, open market operations (OMO), repurchase agreements (repo, foreign exchange reserve management and foreign exchange swaps or sale and buy back).

Primary Reserve requirements

Ghana has a long history of using reserve requirements for both prudential and monetary management purposes. During the period of direct controls, they were used as a supplement to credit controls. The central bank continued to use reserve requirements after the introduction of indirect monetary control. However, the ratio, base and method of calculation have evolved over the years. Prior to March 1990, the ratios discriminated between types of deposit. The ratios applied for demand deposits were higher than those for savings and time deposits (quasi money). The idea was to encourage commercial banks to mobilize long-term funds, which could be channelled into term lending. After 1990, the two ratios were merged into a single ratio on total deposits (demand, time and savings deposits). Finally in 1997, the coverage was extended to foreign exchange deposits. This was in response to the central bank's decision to target the broader definition of money supply, M2+, which also includes foreign currency deposits. Thus, the central bank would have better control over money supply, while at the same time levelling the playing field for the mobilisation of both domestic and foreign currency deposits.

The level of the ratio itself fluctuated over the years, reflecting liquidity conditions in the banking system, and reaching its highest level of 27 per cent in 1990. After 1990, the ratio was progressively

lowered until it reached its lowest point of 5 per cent in 1993. The reserve ratio was again raised to 10 per cent in 1996 and lowered to 8 per cent in 1997 when foreign currency deposits were included in the total deposit base for the calculation of reserves. In July 2000 in response to rising inflation and the sharp depreciation of the cedi, the ratio was raised to 9 per cent.

Reserves against foreign currency deposits

There are two main issues that frequently come up with foreign currency deposits: whether the reserves against these deposits should be held in foreign or domestic currency; and whether foreign currency deposits should be included in the monetary target. Generally, when reserves against foreign currency deposits are held in domestic currency, banks may be exposed to foreign currency risks. However, Hardy (1995) points out that denominating some reserves in foreign currency can complicate monetary policy implementation by removing some of the central bank's control over base money.

The second issue of whether foreign currency deposits should be included in the monetary target is an empirical issue, depending on the substitutability of foreign and domestic currencies³.

Reserve requirements against foreign currency deposits were introduced in Ghana in 1997 with the main aim of levelling the playing field for the mobilization of domestic and foreign currency deposits. As in the case of cedi deposits, requirements against foreign currency deposits are presently fixed at 9 per cent, and are not remunerated. However, BOG requires banks to keep reserves in foreign currency deposits in cedis for a number of reasons. First, keeping reserves in foreign currency would be operationally difficult because the central bank would have to monitor the banks' several nostro accounts in different currencies. Also, there was a need at the time to tighten liquidity further in order to sustain the downward trend in inflation. This measure apparently provided an avenue for the central bank to tighten liquidity conditions without appearing to increase overall reserve requirements⁴.

It is important to observe here that in the application of this policy, banks with large foreign currency deposits have found themselves increasingly having to augment their reserve requirements at the Bank of Ghana as a result of the depreciation of the domestic currency. The problem was more pronounced in 2000 with the sharp depreciation of the cedi following the external sector shocks that adversely affected the economy. This led to calls for a review of the policy by banks that had been hard hit.

In summary, the Bank of Ghana has used reserve requirements extensively to support its monetary management. The methodology BOG follows generally conforms to acceptable norms in terms of base, method of computation and conformity in the treatment of all types of reserves. However, the level of the ratio is still considered to be high at 9 per cent. It is generally accepted that the optimal level should be close to the level of reserves kept by banks for clearing purposes, which in Ghana is estimated at between 2 per cent and 3 per cent. Because of the continued existence of excess liquidity in the system, it is unlikely the ratio will be reduced immediately.

Measurement of reserve requirements

Generally, reserve requirements are more effective if they are observed contemporaneously, both for monetary targeting and prudential purposes. However, for developing countries where significant lags exist in reporting, it may be convenient to have lags between the base and maintenance period. Hardy (1997) also points out that an averaging method is preferable to a day-to-day maintenance method, since the latter compels banks to hold excess reserves and thus affects the stability of the multiplier and further complicates the conduct of monetary policy. In Ghana, the contemporaneous observance and daily maintenance of reserve requirements was used until 1994, when it was replaced by a one-week lagged observance. The seven-day week averaging method also replaced the daily observance at the same time.

In terms of coverage, two items are usually included in the definition of reserves, namely cash in the tills of banks (vault cash) and balances with the central bank. A third item which is sometimes

included is call money in the interbank market. In 1986, Bank of Ghana included all three items in the definition. In 1989, call money was dropped and finally in 1996 the definition was narrowed to include only balances with the central bank. This was done to avoid the difficulty of monitoring compliance when the cash in the tills of banks is included in the definition.

Open market-type operations

In implementing monetary policy, Bank of Ghana intervenes mainly through the primary auction of Treasury bills and BOG bills, a process also referred to as open market-type operations⁵. The system has undergone several transformations. Originally, weekly auctions of Treasury bills and BOG bills were held on Fridays, with the amount offered based on the difference between projected and targeted reserve money, maturing bills as well as Government's borrowing requirements (PSBR). The weekly auctions were initially open to banks and to the non-bank public, although the non-bank public had to submit their bids through their bankers. Pricing at the auction is based on the multiple price auction system, where bids are arranged in descending order and the higher prices are allotted first until the offer is exhausted⁶. Each bidder pays the price he quotes. Investors could also purchase on tap directly from BOG between tenders (auctions) at the weighted average price declared at the preceding auction. The tap was supposed to be open only when targets had not been met, but were, in practice, always open in view of the large liquidity overhang. The tap between tenders was closed to all banks in March 1996, but remained open to the non-bank sector. This situation discouraged the development of the secondary market, and therefore in 1997, BOG abolished the tap for the non-bank sector as well in Accra. Tap sales, however, continue to operate at BOG's regional branches.

1. The Primary Dealer System

In March 1996, Bank of Ghana introduced the wholesale auction system. Tenders became restricted only to primary dealers comprising commercial banks, discount houses and four brokerage firms. A well-functioning primary dealer system should help develop the secondary market. The primary dealers should be able to underwrite the whole issue at the tender. They should also be leaders in the market and act as market makers in government and central bank securities. In this regard, primary dealers should stand ready to give firm price quotations. In return, the dealers are offered certain privileges such as access to special financing arrangements.

In Ghana, the system has not worked well. The auctions are often under-subscribed and the primary dealers make no effort to promote secondary market activity. Bank of Ghana has in a way contributed to the problems by continuing to maintain a window for the discount of government securities. The tap continues to be open to the non-bank sector in parts of the country. There also seems to be a lack of expertise from the market participants, including the central bank.

2. Money market instruments

The main instruments over the years have not changed significantly although there has been a recent shift in composition from BOG bills to Treasury bills. The table below shows that the proportion of BOG bills in the total stock increased from 34 per cent in 1990 to a peak of 80 per cent in 1994 and then fell sharply to less than 4 per cent in March 1998. This followed a deliberate central bank policy of replacing BOG bills with Treasury bills, apparently because of the Government's increasing concerns over interest payments on these instruments. Thus, from 1996 Treasury bills became the main instrument of intervention while at the same time serving the purpose of Government's debt management. The process of conversion was largely completed by March 1998, with the remaining stock comprising 30-day bills, 3-year and 5-year bonds, the last two of which are not actively traded on the market.

Table

Money Market Instruments: 1990-98					
Year	GOG Instruments		BOG Instruments		TOTAL
	Amount	Per cent	Amount	Per cent	Amount
1990	73.6	66.5	37.0	33.5	110.6
1991	58.2	32.2	122.7	67.8	180.9
1992	92.2	38.4	148.1	61.6	240.3
1993	113.1	25.3	334.5	74.7	447.6
1994	119.7	20.0	479.5	80.0	599.2
1995	221.2	25.0	656.8	74.8	878.0
1996	665.8	56.2	518.2	43.8	1184.0
1997	1490.2	88.4	194.9	11.6	1685.1
1998*	1982.4	96.4	73.9	3.6	2056.3

*March 1998

The phasing out of the BOG bills brought into focus the issue of over-financing of the deficit, with the difference between the deficit and the actual issue representing the central bank's monetary intervention. BOG has addressed this issue by opening a separate account called OMO-Tbills into which the proceeds from intervention are put and sterilised. This procedure, however, raises the problem of reconciliation between the stock of bills in the register and what actually goes to finance the budget, a situation which may raise questions about transparency. In spite of the problems, BOG's decision to switch to Treasury bills appears justified in view of the Government's increasing concerns about the interest bill. There was therefore the danger that in future Government might decide to stop paying the interest cost on BOG bills, an action that might affect the profitability of the central bank and potentially compromise the conduct of monetary policy. The central bank may address this issue by introducing secondary instruments, such as repos for its monetary policy intervention. This would require prior actions by the central bank to develop the secondary market by putting in place the framework and instruments, establishing a book entry system, and acquiring a portfolio of assets for use on the market. This system would ultimately eliminate the cost to Government of BOG's monetary intervention.

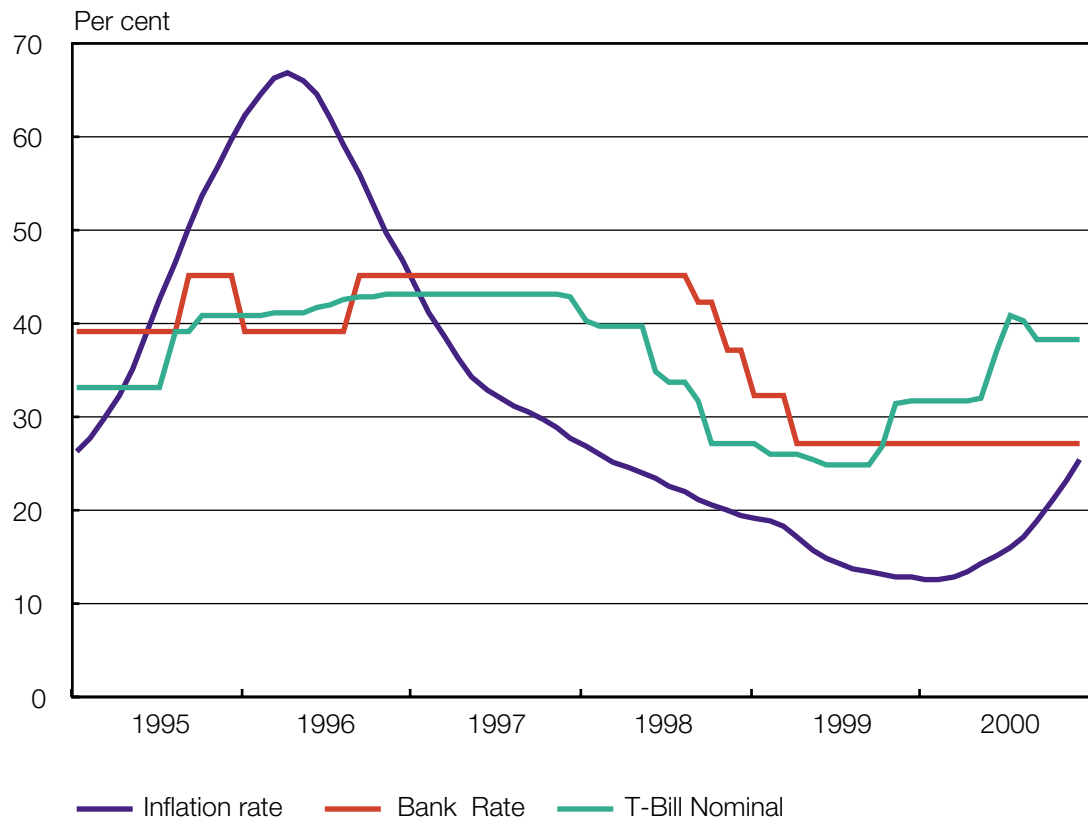
3. Monetary market rates

While a lot has been achieved in laying down the infrastructure for market intervention, there has not been much success in achieving money supply and inflation targets. Again, the main problem has been the continued presence of Government on the market, as well as the inability of the central bank to vary rates to achieve the desired targets. The table and chart show 91-day Treasury bills rates, the Bank Rate and the inflation rate from January 1995 to December 1996. As is evident from the table, the rate has remained stable over most of the period, although market conditions (as measured by the inflation rate) fluctuated during the period. For the whole of 1997, the monthly average rate remained at 42,8 per cent in spite of a declining inflation rate. In 1995 and 1996, the real Treasury bill rate was negative for long periods.

Appendix 1 and Chart 5 show the results of weekly interventions by BOG over a period of two and half years (January 1996 to June 1998). Over most of the period, demand was lower than supply (deficit), while the discount rate remained relatively stable. The few movements in the discount rate correspond to periods when the Bank Rate was changed.

The Ghanaian experience has revealed that market participants respond only to the central bank's actions, which come either through movements in the Bank Rate or the results of preceding auctions. Thus, even if all other indicators (inflation, growth, etc.) point to a change in rates, the market participants appear to wait for signals from the central bank before reacting themselves. One

Average Inflation Rate , Bank Rate and T'Bill Rate



possible explanation of such inertia on the part of the market participants is that the long history of controls (especially regulated interest rates) has rendered them dependent on the central bank to develop their own expertise in this area. It appears therefore that the central bank has a major role to play in removing this inertia, and encouraging banks to follow market trends. In particular, the central bank should use the Bank Rate (or other indicators) actively in signalling its policy stance, rather than allowing the rate to remain stable for long periods while underlying macroeconomic conditions change.

The central bank is however limited in its ability to use the Bank Rate effectively due to cost considerations. Since in Ghana the cost of intervention is financed by Government, it (Government) may resist interest rate increases to levels that are necessary to clear the market. A necessary condition for improvements in money market performance, therefore, is that the Government's borrowing requirement should decline significantly⁷. Secondly, Bank of Ghana should intensify the use of secondary instruments instead of primary issues for monetary intervention, thus reducing the financial burden on Government.

Trends in broad money supply growth

Trends in the rate of growth of money supply in Ghana display the distinctive characteristics of a last-quarter hump largely as a result of the external pre-financing of cocoa purchases. Whereas the cumulative rate of growth of money in the first three quarters of the year falls generally below 25 per cent, the nature of financing the cocoa purchases brings this figure to an average of 40 per cent each year for the period 1994-1997.

The method of financing the purchases of cocoa is such that disbursement of foreign exchange for crop purchases coincides with the purchase of the bulk of the major cocoa crop in the last quarter of the year. The NFA of the Bank of Ghana increases significantly in the last quarter of the year and

the Bank has been unsuccessful in sterilising this increase in many years.

In 1998 however there was an improvement as less pressure from the fiscal side allowed better monetary management in the last quarter of the year. This was due to an improvement in government finances, partly as the result of a better day-to-day monitoring of government position with the central bank. This resulted in a shift in government deficit financing from the central bank to the commercial banks and the public.

Section 3

Conclusion

The primary objective of Bank of Ghana's monetary policy is to reduce inflation to low single-digit levels. The benefits to be derived from the achievement of this objective are significant. An environment of price stability helps people make better economic decisions and results in an improved investment climate conducive to economic growth.

As stated earlier, the operational target used in the monetary policy framework in Ghana is reserve money. The central bank thus regulates reserve money to achieve a desired growth rate of broad money supply consistent with the programmed inflation and real GDP growth rates. In 1998 and 1999, the improvement in monetary management enabled the BOG to achieve its money supply targets which in turn led to a significant slowdown in the rate of inflation, although the single-digit inflation target has not been achieved.

The inability of Bank of Ghana to achieve its monetary targets reflects the deficiencies in the money market in Ghana. The interbank market is not developed and was non-existent till 1990. The market suffers from several problems, including stickiness of interest rates (i.e., the inability of the rate to adjust to clear the market), a poorly functioning primary dealer system, and government concerns over the increasing costs of monetary intervention.

On interest rates the market participants seem to lack the initiative to quote rates that reflect market condition apparently because of the long tradition of controls. In this regard, the paper is of the view that Bank of Ghana will have to play a more active role as a market leader until the secondary market develops and evolves its own yield structure. The Central Bank may do this by actively using the bank rate or other similar indicators to signal changes in market conditions to participants. Government would also have to reduce significantly its borrowing requirements in order to enhance secondary market development.

The Research Department of the Bank of Ghana is currently undertaking a review of the Bank's monetary targets. One area of interest relates to inflation targeting. We recognize the potential of inflation targeting for the stabilization of inflationary expectations, which invariably leads to overall stability in the economy. It also affords the central bank flexibility to put in place monetary conditions that would ensure the achievement of an inflation target over a longer horizon, two to three years for example.

However, on Ghana's preparedness to adopt an inflation-targeting framework, one needs to look at the prerequisites for its adoption. An important consideration is an overriding commitment to price stability. This would not be a problem in Ghana.

An important second consideration is the ability of the central bank to pursue independent monetary policy, not unduly burdened by fiscal constraints. As at the end of 2000, Government's reliance on the central bank's resources was still significant, limiting the BOG's ability to carry out independent monetary policy.

An inflation-targeting framework also requires an ability to systematically assess expected (future) inflation – taking account of factors including aggregate demand and supply shocks, private sector

expectations about future inflation, etc. – which seems to be limited in Ghana at the moment. The Research Department is currently working on a macro-econometric model which may be used for predicting inflation.

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