

The Bank Of Ghana's Role in Providing Liquidity to the Financial Markets versus using the Nominal Exchange Rate as an Anchor for the Price Level

July 2000



Sigma One Corporation

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the Nominal Exchange Rate as an Anchor for the Price Level**

Submitted to:

**U.S. Agency for International Development
Mission to Ghana**

for:

**Trade and Investment Reform Program (TIRP)
Improved Policy Reform and Financial Intermediation
USAID Contract Number: 641-C-00-98-00229**

by:

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In fulfillment of the following milestones:

2.16 Position paper on BOG role in providing liquidity for markets

July 2000

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**THE BANK OF GHANA'S ROLE IN PROVIDING LIQUIDITY TO THE
FINANCIAL MARKETS VERSUS USING THE NOMINAL EXCHANGE
RATE AS AN ANCHOR FOR THE PRICE LEVEL**

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A BACKGROUND PAPER PREPARED FOR BANK OF GHANA, AND
FUNDED BY SIGMA ONE CORPORATION

JULY 2000

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Summary

Ghana's economy has been characterized by macroeconomic instability, largely reflected in intractable inflation, persistent declining cedi-exchange rate, and very high lending rates with large spreads. Indeed, macroeconomic instability is not a recent phenomenon: it has been the bane of Ghana's economic woes since the 1960s, culminating in a major change of policy frame work in 1983.

Before 1983, the general perception was that the inherited financial system at independence was both the cause and consequence of Ghana's financial underdevelopment. This in turn retarded the growth of the real sector as credit was not flowing to the productive sectors of the economy. Consequently, interventionists policies with active Government involvement featuring sectoral credit allocations, government determined interest etc. were pursued until the 1980s.

However, the interventionists policies produced a disincentive effect on the banking system, discouraging banks in the collection of savings, once these banks had attained their ceilings. This tended to reduce the total amount of funds available for credit in the economy. Severe mis-allocation of resources ensued, competition among banks was inhibited and the development of an interbank market retarded. Once the banks met their ceilings, not enough incentives existed to mobilize savings. As banks refused to accept further interest-bearing deposits there emerged intermediation outside the banking system, capital flight and/or the acquisition of durable goods. The increasing dis-intermediation was reflected in the low and declining M2/GDP ratios between 1960-1988, and the subsequent proliferation of various *SUSU Schemes*. This, therefore, called for reforms in monetary management when the economic recovery programme was under way.

In line with the liberal economic policies adopted under the Economic Recovery Programme (ERP) from 1983, monetary policy was also deregulated in a financial sector reform programme. In principle, a full-fledged market-based system of monetary management was institutionalized, apparently to internalize the advantages of indirect money control measures. Among the indirect instruments being used are;

- (i) reserve requirements;
- (ii) open market operations;
- (iii) bank rate or rediscount facility;
- (iv) transfer of Government funds from the deposit money banks to Bank of Ghana;
- (v) reverse transactions or repos; and
- (vi) foreign exchange swaps and outright purchases.

It makes little difference for immediate volume targets whether the Bank of Ghana in its intervention uses, for example, open market operations, reserve requirements, refinance facilities or any of the other instruments. However, in practice there are many operational differences between the various instruments, even though they are all indirect monetary management instruments; the costs of these instruments to the Bank of Ghana, to individual banks, and to the banking system are quite different depending on the instrument used. Furthermore, there are

different degrees of flexibility and effective control related to each instrument, e.g, reserve requirements are relatively inflexible and apply only to banks, whereas open market-type operations are very flexible and directly affect only those banks or nonbank economic agents that choose to participate. Bank of Ghana rediscount facilities in turn have quite different degrees of flexibility depending upon their design. Effective control also depends on whether it is Bank of Ghana or the deposit money bank that has the initiative regarding the use of an instrument: with reserve requirements the Bank of Ghana holds the initiative; with refinance facilities the initiative is typically held by the banks; in open market operations, it is the Bank of Ghana which initiates the operations, but both parties' decisions affect the outcome.

For purposes of making an informed choice among these instruments and how they could be improved to make monetary control more efficacious, we summarize their operational characteristics since their implementation.

In the case of reserve requirements, Bank of Ghana's framework is the monetary base approach with money supply defined as $M2+$, i.e, currency, demand deposits, savings and time deposits and foreign currency deposits with the deposit money banks, DMBs. By this arrangement, money supply is :

$$M2+ = mB.$$

where B is high powered or reserve money and m is the money multiplier

Thus Bank of Ghana has been attempting to influence $M2+$ through the monetary multiplier, manipulating required reserves a means to constraining DMBs credit creation capacity. Although reserve requirements are not a sufficient condition for effective monetary policy as long as interest rates are adequately flexible, they can nevertheless be helpful to support monetary policy. This is singularly so where financial markets are not deep and interest rates cannot be relied upon for the transmission of monetary impulses, and **there is strong basis for predicting the money multiplier.**

Thus within the market framework, from March 1990, Bank of Ghana changed from the two-tier system whereby reserves were specified for the different categories of deposits to uniform reserves requirement. The uniform reserves requirement across deposit categories is an improvement on the two-tier system as this tends to equalize the implicit tax to DMBs. Again in April 1997, required reserves were extended to cover foreign currency deposits. This was as a result of the redefinition of money supply from $M2$ to $M2+$ to include foreign currency holdings. Consequently, Bank of Ghana required that foreign currency deposits with DMBs are to be subjected to the same reserve requirements as Cedi-denominated deposits. Presently, the reserves are 8% for primary reserves and 35% for secondary reserves with a weekly lagged observance reserve maintenance period.

Whilst the required reserves against Cedi deposits appear to have been designed, taking cognisance of the basic tenets in making them effective tools of monetary control, for foreign currency

deposits, the reserves are to be held in Cedis, and not in the foreign currencies. Bank of Ghana's decision that the reserves against foreign currency deposits be held in Cedis is predicated on three arguments, viz; (a) it would be operationally difficult for Bank of Ghana to monitor the various foreign currency accounts at the DMBs; (b) foreign currency reserves may send wrong signals that Bank of Ghana was re-introducing exchange controls; and (c) there was the urgent need to reduce liquidity to stem inflation.

Having examined all three arguments on which Bank of Ghana directed that DMBs should keep reserves against foreign currency deposits in Cedis, it is found out that the reasons are not tenable. The DMBs have complained about the difficulties in managing their balance sheets, especially as exchange rates tend to fluctuate very often, implying that required reserves are changed as and when the exchange rates changed. The policy seeks to penalize those DMBs that mobilize foreign currencies.

Furthermore, the policy to keep Cedis against foreign currency deposits negates Bank of Ghana's conception of liquidity that informed it to redefine money or liquidity as M2+. By Bank of Ghana's insistence that Cedi funds be raised against foreign currency holdings as reserves, Bank of Ghana is inadvertently saying that foreign currency deposits are no longer money!

Generally, the multiplier approach to monetary management appears to have failed so far. Bank of Ghana is not able to reliably estimate the monetary multiplier. This is not surprising if we note that the stability of the multiplier depends on all the factors that affect the behavioural parameters viz, currency ratio; time deposit ratio; savings deposit ratio; foreign currency deposit ratio, government deposit ratio and the reserve ratio. The currency ratio is very problematic for all sorts of reasons, especially with the definition of money as M2+. This entails a foreign currency component which is held only in deposits with the DMBs. As it is, Bank of Ghana has no idea about the foreign currency holdings outside the DMBs. This information needed to enable Bank of Ghana to derive a more accurate money supply multiplier. Obviously, there is much more liquidity in the system than Bank of Ghana can capture with the M2+ definition. Interestingly, however, the high currency-money ratios create an in-built constraint on credit creation by the DMBs, as the monetary multiplier is kept low. Bank of Ghana will have to revisit these issues if a tractable monetary multiplier is to be derived.

Furthermore, DMBs maintain reserve assets in excess of the minimum mandatory required reserves. This means that the multiplier process has been truncated and DMBs are not creating as much money as they should within the mandatory reserves required by Bank of Ghana. If there is an excess money supply problem, Bank of Ghana would have to examine credit to Government since there appears to be insufficient credit to the private sector as the DMBs currently maintain reserves in excess of what Bank of Ghana estimated to be given out as credit to private economic agents. The bane of monetary management is not from private sector credit but from public sector deficit and the mechanisms to finance it. This is where the monetary multiplier approach to monetary management appears not to be helpful in the prediction and management of the money supply in Ghana. Mandatory reserve requirements are introducing their own distortions into the

financial system without promoting effective intermediation. Bank of Ghana may find it more appropriate to use the flow of funds approach to the determination and control of the money supply..

For both theoretical and practical reasons, Open Market Operations (OMO) are preferred among the indirect instruments of monetary management. Several reasons account for this preference. The notable one being, the flexible nature of the instrument. Bank of Ghana can buy and sell securities for whatever amounts it wants and it can do so, if desired, several times within a single day. Furthermore, OMOs are conducted at the initiative of the monetary authorities to influence the cost and availability of credit. Whereas in the case of discount policy, for example, it is the DMBs that initiate when and how much to borrow. As a market instrument, OMOs are voluntary transactions at market determined yields and do not have the implicit tax effects that characterize reserve requirements. To internalize some of these benefits, Bank of Ghana introduced OMOs into monetary management in 1986 with a weekly primary auction in treasury bills; later in 1988, Bank of Ghana Bills were also introduced.

Since March 1996, Bank of Ghana uses the wholesale auction system with tenders restricted only to Primary Dealers. These Primary dealers are expected to make firm price quotations so that they would serve as a nucleus of a secondary market. In practice, however, the envisaged advantages are yet to be realized. First, the auctions are typically under-subscribed. The secondary market has also failed to emerge, apparently because investors can always have access to tap sales at Bank of Ghana's Currency Centers in the regions. In addition, some of the DMBs have instituted minimum acceptable bids from the non-bank public, thereby marginalizing many who would have wished to invest in treasury bills. Furthermore, there are not enough incentives to the primary dealers, especially as anecdotal evidence suggests that there is no transparency in the determination of the treasury bills rates.

Another basic weakness of the system is the restricted nature of suitably designated financial instruments that are traded on the money market. Before 1997, the instruments were Government Treasury Bills and Bank of Ghana Bills. The former were issued to meet public sector borrowing requirements and the latter were aimed at monetary management. By 1996, however, this distinction was dropped and only treasury bills are now used for both monetary management and public sector borrowing requirements. The merger does not make much of a difference in so far as Bank of Ghana avoids **excessive** accommodation of Government expansionary fiscal deficits. Government must ensure that its public sector requirements are met from the sale of treasury bills only without recourse to Bank of Ghana for overdraft facilities. Furthermore, Bank of Ghana must not purchase any Treasury Bills, whether they are new issues or old stock. The primary dealers must be used in these cases to buy the primary issues or the secondary bills. This way, the secondary market development could be fostered. Invariably, this would mean that the necessary incentives must be provided to the dealers in the government instruments.

Within the framework of IMF financial programming, Bank of Ghana uses Net Domestic Assets of Bank of Ghana (NDA_{BOG}) and/or Reserve Money to attain the desired level of $M2+$ as the

intermediate target. By this, Bank of Ghana sets targets for M2+ and domestic credit by reference to expected inflation and output for each base period. Consistently, there have been very little fine-tuning for annual fluctuations in food output and availability especially, and the level of public sector borrowing requirements in view of the volatile nature of Government revenues. Not surprisingly, Bank of Ghana appears not to be succeeding at the efforts in monetary control and inflation management .

The financial programming approach does not make effective distinction between the various financing mechanisms of the fiscal deficits or surplus. This is very important because the way in which fiscal deficits are financed, using domestic resources, has important consequences for the efficiency of that policy. The extent to which Bank of Ghana can effectively control the monetary base depends on the degree to which it can control the various means by which PSBRs are financed. Evidence shows that Government has a problem managing both the public sector deficit (PDS) and the maturing government debt. The latter is especially important as over 30% of government expenditures goes to debt and interest payment on domestic debt.

The emergent interest rate structure also has its ramifications for the efficacy of monetary policy. The interest rate structure appears to be generally directed by Bank of Ghana. This stems from the fact that Bank of Ghana has maintained a dominant presence in the money market and has not been able to vary its rates appreciably, even in periods when inflation was reported to have significantly fallen. Apparently, Bank of Ghana's actions have introduced distortions into the interest rate structure, militating against effective intermediation. Thus, even when Bank of Ghana has been able to sell securities, the thinness of the market has risked a very strong interest rate effect which private entrepreneurs see as undesirable for investment opportunities. Lending rates appear to be excessively high, relative to Bank of Ghana's bench mark rates.

This structure of interest rates has raised several issues, mainly about the transparency in the conduct of the weekly auctions and the subsequent determination of the treasury bill rates. Anecdotal evidence suggests that Bank of Ghana fiddles with the auction so as to maintain the rates at predetermined levels. As the rates are not market determined the primary dealers do not have the incentives to purchase the total supply of bills offered for sale. With a given public sector borrowing requirement, either the money supply or the level of interest rates is determined in the market; Government cannot determine both simultaneously, let alone Bank of Ghana attempting to influence the exchange rate as well. If Bank of Ghana has targeted the money supply, it must necessarily allow the market, especially the primary dealers to interact in the market to determine the interest rates if the management of money is to succeed.

The over-riding constraint on monetary management in Ghana is the multitude of conflicts of objectives and instruments that arise when the markets are liberalized and the DMBs are not constrained by direct control mechanisms. This therefore demands consistency among various strands of economic policy. In particular, the domestic constraints impose a requirement of consistency among (i) monetary and fiscal policy; (ii) monetary and interest rate objectives; and (iii) monetary and exchange rate objectives. The practical way to resolve the potential conflicts is

for Bank of Ghana not to have any interest rate or exchange rate objectives, especially when international trade is excessively liberalized.

Until the inception of the economic recovery programme in 1983, the exchange rate regime was not only fixed but there existed surrender laws, rationing and a plethora of exchange controls to enforce compliance. Government Budgets were characterized by fiscal deficits which were accommodated by expansionary monetary policies with the consequence of intractable inflationary pressures. The exchange rates became overvalued, thereby serving as a tax on export and a subsidy on import. Consequently, there emerged a buoyant black market in foreign exchange.

However, between 1983 and 1987, the system was put on the crawling peg. Since 1988, the exchange rate system may be described as flexible with the licensing of Forex Bureaux, introduction of auction trading and its conversion into an inter bank market. With these changes, authorized dealers, DMBs and Forex Bureaux now deal in international vehicle currencies, buying and selling to the general public in what can be described as a flexible exchange rate regime, largely guided by the gross foreign reserves build-up which must exceed the equivalent of three months of imports. By this, Bank of Ghana is notionally not committed to any nominal value for the Cedi. The flexible exchange rate policy of the Government is to ensure that exchange rate movements are guided by changes in economic fundamentals, and in monetary and fiscal policy.

One main feature of the exchange rate between 1983 and 1999 is the general persistently inordinate depreciation of the Cedi against the US Dollar. Bank of Ghana has made various attempts to ensure a stable exchange rate regime. Indications are that Bank of Ghana embarks upon outright foreign exchange sales to mop up excess liquidity in the market. In such instances, Bank of Ghana sells foreign exchange to supplement treasury bill auctions. Furthermore, Bank of Ghana has introduced foreign exchange swaps into the foreign exchange market in 1997 for the maintenance of a more stable exchange rate. Bank of Ghana offers swaps solely to the DMBs; this involves the exchange of US Dollars for a Cedi denominated, negotiable swap instrument issued by Bank of Ghana with a 91-day maturity profile.

Whilst foreign exchange transactions are swift to remove or inject liquidity into the market they nevertheless have their shortcomings. First, the foreign exchange market in Ghana has only a handful of large participants; anecdotal evidence suggests that they could not make an instantaneously appreciable impact on the liquidity position with the foreign exchange transactions. Thus, foreign exchange swaps are not sufficient for withdrawing or providing liquidity on a broad base from the banking system in Ghana.

Secondly, Ghana's experience has shown that buying foreign exchange spot with a commitment to resell it at an appointed time is risky because of the volatile nature of Ghana's foreign exchange earning. The situation is made worse, especially at times, when speculation is rife and panic attacks are launched on the currency. Once private agents lack confidence in the monetary authorities ability to defend the anchor, especially as they are well-informed about the economic fundamentals that foreign exchange sales or swaps cannot sustain the exchange rate, then they tend to speculate

that devaluation of a sort is inevitable. Speculative attacks will occur, eventually forcing the abandonment of the anchored regime. If the monetary authorities attempt to impose controls on foreign exchange transactions as a remedy, a parallel market with a more depreciated exchange rate will emerge. Ghana is currently experiencing all these facets since the beginning of the millennium. All attempts to sustain the exchange rate by selling foreign exchange have so far flopped. Once Bank of Ghana is not able to finance the surge in imports, and rationing ensues in the official foreign exchange market as the Minister of Finance's actions purport to do, fluctuations in the parallel market rate may severely distort the signal that a fixed exchange rate was intended to convey to price setters in the economy.

Although the few times foreign exchange was sold, the exchange rates maintained some temporary semblance of stability, the depreciations which followed later showed that such nominal anchors were fictitious. In any case, much as Bank of Ghana would like to use foreign exchange swaps or outright sales as an instrument to stabilize the exchange rate and use it as an anchor against inflation, indications are that Bank of Ghana's reserves were generally below or just at target levels and limited its ability to do so. Ghana's economy is generally subjected to stochastic shocks which are very difficult to predict in practice. Its exports, cocoa and gold, and its principal import, crude oil, are subject to some of the world's most volatile commodity markets. Consequently, basing a nominal anchor on expected disturbances would not be an optimal policy strategy. It would be extremely difficult to defend some nominal value of the Cedi with such kind of economic fundamentals. Unless the variability and the likelihood of occurrence of some kinds of shocks are deemed very low from pragmatic view points, a more preferred strategy to the foreign exchange anchor is the money supply anchor.

The experiences of the ERM currencies that anchored their currencies to the Deutschmark is very educative for Ghana. Before the various currencies found their market levels after moving from the anchor, the British, French, Italian Spanish and Swedish central banks had intervened to the tune of US\$100 billion in addition to the anchor central bank, the Bundesbank's own intervention of US\$50 billion to keep the ERM together. In similar vein, the experiences of some Latin American countries that used the US Dollar as an anchor further reflects the unsustainability of such nominal anchor regimes, especially once the economic fundamentals are different for the various countries. Argentina and Mexico, among others, fixed their exchange rate to the US Dollar to internalize low rates of inflation. However, by 1994, Mexico had to abandon the anchor, but not before the US had to assist with massive doses of foreign exchange.

It must be borne in mind that the two main factors that tend to derail monetary policy, are the exigencies of fiscal deficits and the management of international balance of payments and the exchange rate. Care must be taken to find prudent measures that are peculiar to local circumstances as Germany did. Germany was one country whose inflation record was legend but it managed to contain monetary policy to become a low-inflation country with a stable Deutschmark that now serves as an anchor to other countries that were historically better monetary managers. Monetary policy must develop a reputation of being used in a sensible and a consistent manner to contain not only inflation, but other macroeconomic objectives that can throw a monkey wrench

into inflation management itself.

Certainly, arguments for a nominal foreign exchange anchor are appealing; but it must be borne in mind that, since the shocks that tend to disturb Ghana's economy are fundamentally external and environmental, the choice of a monetary target to manage inflation and other economic objectives is preferred to the exchange rate as a nominal anchor. As it is, the money supply is linked to the exchange rate and the interest rate, just as it is linked to inflation. These are the fundamental prices that significantly affect the allocation of resources one way or the other. To have one of these prices as the overriding objective will hurt the others, especially in an economy like Ghana with so many structural imbalances and bottlenecks in all the key sectors including food sector, and export and imports markets.

1 Introduction: Macroeconomic Instability And The Need For Monetary Control

Ghana's economy has been characterized by macroeconomic instability, largely reflected in intractable inflation, persistent declining cedi-exchange rate, and very high lending rates with large spreads. In each of these shades of macro-instability, there are significant unpredictable changes in prices of goods and factors of production that distorts the planning horizon. Emphasis tends to be put on short-term interest with disastrous consequences for investment projects funded by banks, especially long term ones.

Both policymakers and researchers appear to be unanimous in their diagnosis that the underlying cause of the macroeconomic instability in Ghana is excess liquidity and/or monetary overhang. Being the chief purveyors of credit and the hub of the financial market, especially in a developing economy without a sophisticated financial superstructure such as Ghana, banks are singled out as the major source of excess liquidity as they prefer to hold liquid assets rather than support investment projects through lending, apparently as a consequence of macroeconomic instability. Analytically, interbank debt settlements and cash withdrawal needs of depositors are met by drawing on credit accounts held by the banks at Bank of Ghana, or by using till/vault cash. It is these assets which represent bank liquidity or the reserves of the banking system. Added to bank liquidity is the money holdings of the non-bank public. When these liquid assets, the share of liquid assets in banks portfolio and the share of liquid assets in money holdings of the non-bank public, co-exist with macroeconomic instability, indications are that the economy is awash with excess liquidity.

Another facet of the macroeconomic instability problem is the persistent depreciation of the Cedi against the major international vehicle currencies. Bank of Ghana has used both monetary policy and exchange rate policy as well as other interventions to prop up the value of the Cedi as a means to suppressing measured inflation. So far, all attempts to stabilize the exchange rate have failed. It is therefore necessary to examine Bank of Ghana's exchange rate policy and to explore the viability of using the foreign exchange rate as a nominal anchor for inflation.

Naturally, the current undesirable state of affairs needs to be rectified by monetary management that removes the excess liquidity from the system and ensures that banks lend for investment projects. In such monetary management, Bank of Ghana has two options; it can use its regulatory powers directly by setting or limiting interest rates or the amount of credit outstanding, or by indirect means through the money market. In either case, Bank of Ghana as the issuer of reserve money, currency in circulation plus deposit balances with the central bank, would reduce liquidity. That is, Bank of Ghana has a choice between direct instruments and indirect instruments of monetary management, or indeed, both to inject liquidity or remove liquidity from the system.

It is in this spirit that Section 31 of PNDC Law 291, Bank of Ghana Law of 1992, has explicitly spelt out the instruments of "monetary management" as follows:

- a. alter the minimum ratio of reserve to deposits or the minimum capital adequacy ratio which each banking institution shall maintain;
- b. alter the discount and interest rates of the Bank to be applied in credit operations with banking institutions;
- c. Buy or sell in the open market commercial bills, Government bonds and securities or bonds and securities guaranteed by the Government;
- d. issue, sell, repurchase or redeem Bank of Ghana securities;
- e. impose ceiling on the level of bank credit or the rate of growth of bank credit;
- f. expand or contract credit to the banks;
- g. determine the maximum lending period by banking institutions, the kind of collateral and amount of loan against such collateral;
- h. grant loans to banks for on-lending to institutions engaged in industrial, commercial or agricultural projects repayable on demand or on expiry of a fixed period and on such other terms and conditions as the Board may determine;
- i. authorize such banking institutions as it may deem fit to accept deposits for the Government or order the transfer of Government deposits with any bank;
- j. impose such special requirements on deposit with banking institutions as it may determine.

With these array of statutory powers, Bank of Ghana is theoretically poised to conduct monetary policy, the primary focus of which is, the attainment and maintenance of a stable monetary environment that, on a consistent basis over time, neither accommodates inflationary pressures nor constrains economic growth unduly, whilst simultaneously ensuring a sustainable balance of payments outcome.

In practice, however, Ghana's experience so far suggests that this has not occurred, as the economy has been saddled with macroeconomic instability. Table 1 shows the growth trends in money supply, inflation and the rate of depreciation of the Cedi against the US dollar between 1992 and 1999. A dominant feature of the trends exhibited in Table 1 is that both monetary and inflation targets have not been realized, and as is to be expected, the exchange rate is constantly under pressure. Indeed, between 1995 and 1998, attempts were made to fix exchange rate targets in the annual budgets statements as well, but these were also never realized. For example in 1994, the monetary authorities targeted the end of year exchange rate to be c925 to US\$1, but the out-turn was c1025 to US\$1; for 1995 the target was c1135 to the US\$1 but the actual turned out as c1446 to the US\$1.

Table 1 Cedi Depreciation Rates, Monetary And Inflationary Trends: Targets Versus Actuals

Year	M2+ Growth Rates %			Inflation Rates %			Cedi/Dollar Rate of Depreciation
	Target	Actual	Excess M2+	Target	Actual	Excess	
1992	9.60	52.97	43.37	5.00	13.30	8.30	33.33**
1993	8.20	34.65	26.45	8.50	27.70	19.20	57.36
1994	5.00	53.17	48.17	15.00	34.20	19.20	28.11
1995	14.00	40.74	26.74	18.00	70.80	52.80	37.71
1996	5.00	41.62	36.62	20.00	32.70	12.70	20.33
1997	25.00	41.98	16.98	15.00	20.80	5.80	22.70
1998	18.00	17.60	-0.40	9.50	15.70	6.20	4.10
1999	14.50	17.33	2.83	9.50	12.60	3.10	33.00

Source: Bank of Ghana Records

** This percentage change was over the previous year.

The whole range of policy measures spelt out for monetary management in the 1992 Bank of Ghana Law can be classified into two types, viz, direct control measures and market based instruments. As we demonstrate shortly, the implications in selecting and using the measures are different and far reaching for both economic and financial development.

Although the Bank of Ghana Law has catered for both broad types of monetary instruments the focus changed from the use of direct controls to the use of indirect measures in the early 1990s. By this, major and fundamental changes were made in the conduct, strategy and operation of monetary policy in Ghana. Nearly all dimensions of monetary policy changed significantly, with the notable ones as follows:

- i. Change in institutional framework with the banking system becoming predominantly private, and the emergence of nonbank financial institutions that have the capacity to enhance the efficacy of monetary policy e.g, discount houses and Ghana Stock Exchange;
- ii. The role perceived for monetary policy became increasingly focal in the overall management of the economy within the Polak Framework of IMF Financial Programming;
- iii. The objective of monetary policy was reduced basically to the containment of inflation and stability in balance of payments;
- iv. The techniques of monetary management were changed from direct instruments to indirect instruments or market-based instruments.

Thus, as part of the financial sector reforms, it was conceived that monetary policy would be conducted more in terms of market mechanisms, and that monetary management would be by interest rates rather than by direct credit control mechanisms. Invariably, the above changes were purported to facilitate the conduct of monetary policy, by focusing on the control of the money supply. Bank of Ghana has, consequently, set targets for monetary growth as a means of reducing inflation from double digits to a single digit by 2000.

Against this background of macroeconomic instability and Bank of Ghana's powers to manage liquidity, this study aims at identifying improvements that can be made to current methods of providing liquidity to the financial system. To achieve this objective, the study first examines monetary management practices before the change to indirect methods or market based instruments. The study will look at the baneful effects of direct monetary controls as basis for change to indirect methods that were begun in 1992. The next section looks at the indirect methods that were adopted, examining them for their theoretical advantages. After this, the study looks at the practice of the market based policies in Ghana, assessing the practices for strengths and weaknesses. Next, we look at the basis for the use of foreign exchange rate as the nominal anchor for inflation. We conclude with suggestions on how to improve upon liquidity management.

2 Background To The Introduction of Indirect Monetary Management In Ghana

2.1 The Rationale For the Choice of Direct Credit Control Measures

Before the financial sector reforms in 1988, the system of monetary management in Ghana was typically based on direct controls, on the premise that the financial system that emerged with Ghana's Political Independence was not proactive enough to support the type of development tempo envisaged. The banking system system, as it evolved after independence until the late 1980s, was based on some perceived shortcomings of the banking practices inherited from the colonial era. The broad picture presented by the pre-independence banking arrangements may be summarized as follows:

1. the banks served primarily the needs of the expatriate communities.
2. the banks had only negligible interest in direct lending to local enterprises.
3. bank office concentration in expatriate centers suggested that there was negligible interest in expanding domestic resources.
4. banks imposed high charges for routine banking services.
5. branch banking practices led to export of funds to more financially viable branches overseas

Consequently, post independent financial reforms in Ghana concentrated on both institution building and review of policies that would make credit available to various designated economic agents considered as deprived sectors. **By this, the financial policies that were implemented between 1960 and 1987 were the first general set of financial reforms directed at removing the perceived distortions of the then banking practices and monetary arrangements to ensuring that social or national profitability was taken into account by the chief purveyors of credit in their assets portfolio** (Trevor, 1951, Gockel, 1995).

In this respect, the policy framework focused on Keynesian models that the interactive mechanism between finance and economic development proceed from low interest rates to increased investment to high rate of output/income growth, and subsequently to higher savings rates. Consequently, four general considerations tended to influence financial policies in Ghana before the financial reforms. These were, the desire to:

1. increase the level of investment;
2. improve the allocation of investment among the various sectors of the economy, including the micro and small-scale enterprises;
3. keep interest costs down in order to avoid what was believed to be the inflationary effects of liberalized market rates of interest;
4. maintain low and stable interest rates to countervail the perceived baneful effects of exorbitant rates in the informal financial markets.

To these four objectives could be added a fifth; government quickly discovered that it could use the banking system including the Bank of Ghana to provide cheap finance for the budget deficit.

To achieve these objectives, the post-independence reforms included:

1. government-determined interest rates, typically low and different for deposits and loans of different maturity and loans to different sectors;
2. credit ceilings;
3. sectoral credit controls;
4. high reserve requirements.
5. government directives to lend to SOEs
6. limits on lending to foreign-owned companies
7. institution building - creation of development banks, outwardly specialized by sector; and
8. nationalization of foreign-owned banks or participation in such banks with majority share;

Analytically, low interest rates and sectoral credit ceilings were designed to reinforce each other to ensure that bank credit flowed to the designated priority sectors of the economy namely agriculture, manufacturing and exports. Bank of Ghana used all sorts of proxies for the beneficiaries of financial policy - micro and small-scale Enterprises (MSEs), Small and Medium-Scale Enterprises (SMEs), manufacturers, exporters, small farmers, artisans etc. Irrespective of terminology, however, the intention was usually clear as to the destination of the credit.

These sectors were presumed to have large unsatisfied credit demands, implying that the credit constraint had been predominantly the inhibiting factor in economic development at large; and at the micro level, that it had been the factor retarding the productive potential of the entrepreneur and the growth of private sector enterprises. Consequently, credit programmes, both institution building and policy announcements, were directed towards solving these unsatisfied demands for credit whilst at the same time controlling excessive increases in money supply.

The issue is therefore to examine how Bank of Ghana determined credit demand at the macro level and how this approach to the determination of the demand for credit was factored into monetary management. Whilst the quest of easing credit constraints underpinned the evolution of Bank of Ghana's financial programmes, its quantitative derivation was based on the type of economic strategies pursued immediately after independence. To a great extent, the economic system was associated with substantial direct government intervention in not only financial aspects, but also in other aspects of the economy such as state ownership, price and distribution controls and/or subsidies. The credit control framework was thus part of a broader interlocking system of economic controls. By this, the growth path of the economy was selected and predetermined targets were set for the economy and its constituent parts. The strategy emphasized the importance of capital in production so that the output targets for the economy and the various sectors were set. The essential issue was thus reduced to how much investment was needed to achieve target increases in output. This led policy makers at both Bank of Ghana and the Ministry of Finance and Economic Planning to define credit demand in terms of incremental output and proportional output.

The fundamental assumption of the incremental approach is that credit is required to support economic growth in the same proportion that it is used to fund present levels of economic activity.

Current credit requirement figures begin with the amounts of credit disbursed during a recent period for the economy as a whole and for the respective sectors. These amounts are multiplied by one plus a projected percentage increase in the sector's output. The percentage decided on depends on the Bank of Ghana's overall macroeconomic objectives. In this scheme, new credit demand is defined as the difference between the amount of credit disbursed in the previous year and that derived for the current year.

The proportional output approach derived credit demand from a sector's contribution to the economy. In this respect, GDP was analyzed in terms of the relative importance of the different sectors' contribution to economic activity. The ratios obtained were then used as bases of credit policy where the total amount of credit disbursed in the previous year was multiplied by the ratio to quantify the sector's credit demand, or the amount of credit which ought to be flowing to the sector in the ensuing year. Together, the incremental and proportional methods were used by the Bank of Ghana to derive the credit ceilings and to set sectoral credit guidelines for the banks. However, unlike the incremental output approach (which defines credit demand in terms of some target output), the proportional output approach generally indicated credit insufficiency rather than an exact amount of credit to be made available to a sector. Ostensibly, credit ceilings and sectoral credit controls attempted to curb inflation whilst allowing some official selectivity in credit allocation intended to promote a specific pattern of investment and growth. The designated priority sectors were the export, agriculture and manufacturing sectors.

Thus for each year until 1990, Bank of Ghana's Research Department prepared a Monetary and Credit Plan, describing the major trends in monetary and credit developments as well as the monetary and credit control measures that guide the banking system's operations - interest rates, reserves requirements, sectoral credit ceilings and mandatory lending ratios. Invariably, credit ceilings and sectoral credit controls appear to have been the major instruments of Bank of Ghana's financial policy between 1960-90. The credit ceilings were derived from Bank of Ghana's macroeconomic ceilings on the banking system's net domestic assets set according to monetary and inflationary projections. Taking into account the actual economic developments during the year, Bank of Ghana estimated the anticipated expansion of the money stock, other bank liabilities and net foreign assets. Based on these estimates, Bank of Ghana derived its expansion coefficient for total credit, which was then broken down into the respective sectoral credit needs according to the sectors' projected percentage increases in output. In determining the various sectors shares in total credit, Government financing needs were taken as given and the shares of the other sectors as a residual. In the case of bank specific ceilings, each bank's ceiling was categorized into credit to the rest of the economy and credit to the government and to cocoa financing. Bank of Ghana prescribed permissible percentage increases over each bank's disbursed credit to a sector at the end of the preceding year, without provisions for bad debts and loan loss. Implicitly, by adding all sectoral demands for a bank, Bank of Ghana was able to set also an overall ceiling for each bank. In this scheme, the allocation among banks of the overall increment for credit expansion was based on historical market shares rather than on the basis of each bank's efficiency and capacity to generate new deposits and lending opportunities.

Thus for example in 1968, the Bank of Ghana in its financial policy directed that;

"in consonance with the projected real growth rate in 1968, some increase in commercial bank credit, particularly to the productive sectors of the economy, would be fully justified. The total increase in bank loans and advances during 1968 (other than for cocoa finance) will, therefore, be permitted by up to 12 percent of the level of 1967. With a view to giving maximum encouragement to production in the private sector, banks would be permitted to reflect this as follows; (i) in the productive sectors of Manufacturing, Agriculture, Mining and Exports combined, commercial banks are expected to increase their lending up to 50 percent of the level at the end of 1967; (ii) for imports, construction, services, personal loans and others combined; commercial banks are expected to continue to exercise restraint in lending, and to limit their loans for these purposes to not more than 10 percent above the level at the end of 1967" (Bank of Ghana, Annual Report, 1968 p.44).

It is noteworthy that the above example is typical of many such monetary and credit policy statements. Again in 1983, the Bank of Ghana defined the credit demand for the sectors as follows;

"the cash reserve requirement ratio of the major commercial banks was, however, changed from 35 percent to 20 percent to enable the banks to finance the expected increase in economic activity. Ceilings on sectoral credit to some of the priority sectors were also raised to ensure an adequate flow of credit to these sectors. In this regard, the credit ceilings were raised from 75 percent (of the level of December 1982) to 100 percent for the transport, storage and communications sector. The highest proportional increase was however, in respect of import trade, whose credit ceiling was raised from 100 percent to 600 percent. As in the previous year, there was no ceiling for the agricultural sector; furthermore all the banks were required to lend at least 20 percent of their total loan portfolio to the agricultural sector. Ceilings on credit to electricity, gas and water as well as construction, designated non-priority sectors, were raised from 50 percent to 100 percent and 25 percent to 100 percent respectively. The proportion of the permissible total domestic credit increase to Government was reduced from 40 percent in the previous year to 28 percent in the year under review in order to make adequate provision for the credit needs of the non-government sector and to curb Government reliance on borrowing from the banking system" (Bank of Ghana, Annual Report, 1983 p.1).

In substance, the incremental approach could be reduced to officials making decisions about priority sectors and what they felt was desirable. Apart from its simplicity, the approach failed to go beyond the mathematical relationship between output and credit. It did not deal with the substance of transactions or the financial calculations it sought to influence. Specifically, it did not provide an indication of the quality of the credit in use or expected to be used. Thus for example, it did not take cognisance of the larger amounts of non-performing loans carried by the banks: in particular, it failed to analyze why the priority sectors have difficulty attracting credit in the first place. In fact, while the non-performing loans indicated that lending could not have been sustained without policy changes in the credit system, the incremental output approach to credit demand

always indicated that more credit should be made, regardless of the borrowers' potential and of the incentives to repay such loans. Where a bank failed to meet credit targets for other priority sectors apart from agriculture, the amounts were subtracted from the credit ceiling allotted to it. Unfortunately, however, the incremental output and proportional output methods of estimating credit demand by Bank of Ghana did not take into account other binding constraints on investment, particularly in the sectors designated as priority sectors and which were to be apportioned the greatest credit demand. Credit demand targets did not contain measures for discriminating against proposals of credit applications likely to lead to bad investments and bad loans. The records of banks' huge amounts of non-performing loans raised doubts as to the suitability of these measures in quantifying credit demand: the banking system ended up carrying large amounts of nonperforming loans that had to be transferred to NPART in 1990 as part of the financial sector reforms (FINSAP). Table 2 shows the details of the non-performing assets transferred in 1990.

Table 2 NPAs Transferred to Non-Performing Assets Recovery Trust by Banks In 1990
Millions of Cedis

Bank	Amount Of NPAs Transferred To NPART	% Of Total NPAs Transferred To NPART
GCB	14,321	28.4
SSB	12,585	25.0
NSCB	725	1.4
ADB	1,293	2.6
NIB	6,623	13.1
BHC	12,853	25.5
Barclays	689	1.4
SCB	462	0.9
MBG-	881	1.7
Total	50,433	100

Source: Gockel, A. F. (1995) *The Role Of Finance in Economic Development: The Case of Ghana* Unpublished Ph.D Thesis, University of Manchester, U.K.

In fact, so important had the policy of giving directives to the banks become, that Bank of Ghana noted in its 1983 Annual Report as follows;

"To give more concrete expression to its agricultural policy, The P.N.D.C. Government adopted policy measures which sought to increase the level of credit to the agricultural sector, especially to the small-scale farmers who produced the bulk of the country's food requirements. In this regard, all commercial banks were required to lend at least 20 percent of their total loan portfolio, as at every reporting date, to the agricultural sector. This proportion was meant to comprise at least 12.5 percent of that portfolio to the small-scale farmers and at least 7.5 percent to other farmers ... to ensure effective implementation of that agricultural credit policy, all banks were required to comply with those directives. **Where, for some reason, a bank was unable to comply, it was required to transfer to the Agricultural Development Bank [ADB] such amounts as would bring their total lending to the agricultural sector to the required proportion. Such transfers, however, would not attract any interest**" (emphasis mine, Bank of Ghana, 1983 Annual Report, pp.14-15).

These approaches to quantify credit demand entail cheap credit policies without proper remunerative uses of credit. Indeed, because of the extreme regulation of banking practices, banking became a mechanical process, especially as banks were programmed by Bank of Ghana as to how to manage their portfolios. Very little imagination went into assets and liability management: because of the directed credit programmes, there ensued an uncompetitive banking environment, market inefficiencies and political patronage in the banking system. In addition, since managers of these institutions did not share any risk of loss, they had a propensity to take on additional risk without paying any price for their actions. Not surprisingly, the banks, especially the state-owned banks, accumulated huge amounts of non-performing assets as shown in Table 2 above.

Pro longed quantitative controls on credit as happened in Ghana tended to discourage many forms of competition. Credit ceilings tend to limit competition between banks as credit is allocated on the basis of historical market shares, and not according to lending opportunities. Bank -by- bank ceilings distort competition by penalizing more dynamic banks and discouraged financial savings mobilization. Once a bank reaches its ceiling, it has no incentive to compete for additional deposits, even though indications were that some of the major banks had profitable clients. As was the case, banks tried other innovative practices to beat the dirigiste approach to credit management, for example asking their favoured clients to establish pseudo subsidiaries which fall in the designated priority sectors. Evidence from surveys conducted suggested that the bigger and more innovative banks advised their prime customers to establish pseudo farms for purposes of accessing credit under the Agricultural Sector allocation. Thus emerged such farms as UTC FARMS, GLAMOUR FARMS, to mention a few (Brownbridge and Gockel, 1998). Not surprisingly, the bigger primary commercial banks were able to operate within their ceilings and sectoral guidelines. By this, bank credit became fungible and Bank of Ghana was not achieving its financial policy objectives. In any case, the fact that ceilings were tested only periodically meant that banks were able to exceed their ceilings and “window dress” their credit numbers when reporting to Bank of Ghana.

There was difficulty in monitoring credit ceilings and the sectoral credit guidelines, as banks sought ways to extend credit in forms not caught by the ceilings, and as the numbers for outstanding credit balances became less meaningful due to adjustments as a result of provisions and exclusion of capitalized interest. The fact that credit ceilings or incremental targets and sectoral or proportional guidelines needed to be determined and interpreted by the Bank of Ghana for each of the then eleven banks, meant that the Bank of Ghana had abandoned its fundamental role of macroeconomic management and supervisor of the banking system and was rather meddling in the microeconomic management of the individual banks. This, as was noted earlier, made balance sheet management a mechanical process for bank officials, punishing the more *efficient banks* and creating disincentives in financial development.

Furthermore, credit ceilings limited the scope of borrowers to switch between banks. Not only were banks limited in how they could use funds, but in a situation of rationing, would-be borrowers had to win the goodwill of potential lenders; one way to do this was to leave on deposit

larger balances than would otherwise have been desirable. Analytically, the shadow price of credit was in excess of the quoted price and included the opportunity cost of the surplus deposits. Such a situation also made changing banks a more difficult step to take and more generally slowed down portfolio and other financial adjustments. As was to be expected, there are less immediate pressure for banks to make their liabilities competitive, i.e. increase the price they are prepared to pay for funds (Harrington, 1987 and Gockel, 1995). In sum, it was apparent that credit ceilings and selective credit controls, like low interest rate policies, caused banks to hold excess cash, as lending under such prescribed conditions was not exactly profitable.

In addition, credit ceilings and sectoral credit allocations were incompatible with the need for increased intermediation as they tended to encourage both intermediation outside the banking system and capital flight. In fact, although credit ceilings and sectoral credit controls were relatively easy to administer, their use added further distortions in financial intermediation. Together with low interest rates, they produced a disincentive effect on the banking system, discouraging banks in the collection of savings once these banks had attained their ceilings. This tended to reduce the total amount of funds available for credit in the economy. As obtained in Ghana, severe misallocation of resources ensued, competition among banks was inhibited and the development of an interbank market retarded. Once the banks met their ceilings, not enough incentives existed to mobilize savings. Once the banks refused to accept further interest-bearing deposits, this tended to encourage intermediation outside the banking system, capital flight and/or the acquisition of durable goods. Thus, intermediation was discouraged as was reflected in the low and declining M2/GNP ratios between 1960-1988, and the subsequent proliferation of various *SUSU Schemes* (Aryeetey and Gockel, 1991; Gockel and Brownbridge, 1998).

2.2 Reserve Requirements: Practice Under Direct Controls Regime

For monetary management purposes, the Bank of Ghana has broad legislative powers to specify the nature and level of various types of reserves that the deposit money banks (DMBs) must hold. These reserves are calculated as a fraction of selected categories of customer deposits with each bank. Before March 1990, the Bank of Ghana did not require uniform reserves across the different types of deposits as a means of equalizing the implicit tax involved. Rather, Bank of Ghana imposed reserve ratios for cash and secondary liquid assets. The cash reserve requirement was a two-tier system: one for demand deposits and another for savings and time deposits. Typically, reserves against demand deposits were higher than those for savings and time deposits. Thus, before the change over to uniform reserves across deposits in March 1990, the Bank of Ghana required the DMBs to keep 30% reserves against demand deposits and 10% against saving and time deposits. These reserves were held as either cash in tills or as balances with Bank of Ghana: deposits at the discount house were excluded from eligible assets for the primary requirement. Apparently, Bank of Ghana envisaged that the volatile nature of demand deposits warranted a higher reserve requirement, and the lower reserves requirements required for savings and time deposits would serve as an incentive to the DMBs to mobilize term funds for medium and longer

term lending.

Reserves in respect of secondary liquid assets were to be held as Government Stocks, Treasury Bills, Bank of Ghana Bills, Cocoa Bills, Grain and Cotton Bills as well as any other paper approved by the monetary authorities. More often than not, these qualifying assets were not sufficient to cater for the DMBs' secondary reserve requirements and the banks ended up holding excess cash with the Bank of Ghana. However, deposits at the Bank of Ghana and the discount houses did not qualify as eligible liquid assets under secondary reserves requirement, even if these deposits were in excess of primary reserve requirements. Such deposits at the Bank of Ghana earned no interest and as such had a disincentive effects on the savings mobilizing efforts of the DMBs (Gockel, 1996). For both the primary and secondary requirements, the deposit base was defined to exclude interbank deposits. They were contemporaneous, hold-at-all-times requirements, and monitored on a daily basis each week. Failure to meet either of these requirements was an offense, subject to a fine of 0.1 percent of the deficiency per day, plus an additional interest charge specified by the Bank.

Table 3 shows the liquidity position of banks in Ghana before the change to indirect monetary control instruments. With directed credit programmes as was the case in Ghana, banks' remaining resources over and above their ceilings was considered "excess" liquidity. Unlike the reserve requirements in the industrialized countries which are typically low, often less than 10 percent, reserve requirements in Ghana averaged about 32 percent between 1987-89. The effects on the banking system of such high reserve requirements, were twofold. First, a substantial amount of the available funds were directed away from potential borrowers. These potential borrowers had to look elsewhere for their financial needs, and indications were that there was a growing informal financial sector (Gockel, 1996).

**Table 3 Average Liquidity Position Of Banks As Percentage of Deposits: 1987-89
(In Percentages)**

Type Of Reserve	1987	1988	1989
Cash Reserves	25.8	25.4	25
a. Cash In Till	7.2	5.6	4.6
b. Deposits With BOG	14.6	14.8	20.4
c. Deposits With Banks (Net)	3.5	0.1	-
d. Money At Call With CDH	0.5	4.9	-
Liquid Assets	15	16.6	18.5
a. Treasury Bills	4.4	3	2.3
b. Government Stocks	9.3	6.4	4.6
c. Grain Bills	1.3	5	4.9
d. BOG Bills	-	2.2	6.6
Total Liquid Reserves	40.8	42	43.5
Required Cash Reserves	21.7	19.6	22
Required Secondary Reserves	6.7	10	15
Total Required Reserves	28.4	29.6	37
Excess Liquidity	12.4	12.4	6.5

Source: Bank of Ghana, Research Department Records.

BOG= Bank of Ghana: CDH= Consolidated Discount House

Secondly, when banks are forced by the monetary authorities to hold large amounts as high reserve requirements in low or zero-yielding assets, major distortions to interest rates arise, as banks try to make up for lost revenue by increases in the margin between deposit and lending rates, or by raising service charges, commissions and fees. In Ghana while both deposit and lending rates were largely controlled, the minimum deposit rate tended also to become the maximum in

practice. Moreover, the banks resorted to high service charges to borrowers so that in the final analysis, the effective rate of loans was higher than programmed (IPC, 1988)¹. The lesson to be learned is: if banks have to voluntarily hold cash balances in excess of statutory requirements to meet customer withdrawal clearing needs, then such high reserve requirements become excessively punitive, much more so when the reserves do not attract any returns. In such cases, disintermediation occurs and as was the case in Ghana, banks gave all sorts of reasons to drive away wealth holders who wanted to operate interest bearing accounts such as time and savings deposits (Gockel, 1995). The interest banks received on their secondary reserve holdings, both required and excess, was either zero or lower than the cost of funds of interest bearing deposits, or at least the directed deposit rate to be paid by banks to depositors (Gockel, 1995).

To sum up, Bank of Ghana's monetary management through direct policy instruments cumulatively accentuated the distortions in financial intermediation, making investment in financial assets less attractive. Financial intermediation became shallower, with increased informal financial activities and capital flight. This experience suggests that directly and in other ways, monetary policies that are based on credit controls and high reserve requirements, that do not take into account cost of funds to banks, tend to be repressive and to inhibit the development of the financial sector. This in turn retards the process of economic development and in certain instances, can completely reverse growth, as appears to have been the case in Ghana. In such circumstances, price stability and favourable balance of payments become illusive, resulting in overvalued exchange rates that serve as taxes on exports and subsidies on imports. This experience resulted in the call for reforms in monetary management.

¹Interdisziplinäre Projekt Consult (IPC), 1998, Rural Finance In Ghana, A Research Report Prepared on Behalf Bank of Ghana, Frankfurt. It was found out that effective rates were as high as 70%.

3 Monetary and Financial Policy Reforms

3.1 The General Principle of the Market-Based System of Monetary Management

In line with the liberal economic policies adopted under the Economic Recovery Programme (ERP) from 1983, monetary policy was also deregulated in a financial sector reform programme between 1987 to 1992. Thus, in principle, a full-fledged market-based system of monetary management was institutionalized, apparently to internalize the advantages of indirect money control measures. Indirect monetary instruments absorb or sterilize a certain amount of liquidity and thus limit banks' resources available for lending. When liquidity is sterilized, the capacity of deposit money banks to lend is reduced; when liquidity is released, their capacity to lend is increased without the distortions and disincentives associated with directed credit policies. When the Bank of Ghana uses these indirect control instruments in its monetary management, the target group of its intervention is the banking system. Analytically, when monetary authorities use the bill auction mechanism, and especially if the auction is open for nonbank public to bid, the effects of the central bank's intervention on liquidity and interest rates is more transparent and quickly spreads throughout the economy. Indeed, as the liquidity effects permeate through the economy as a whole, affecting all economic agents, the instruments are shown to be more efficient. To allow such transmittal, it is important to reduce regulatory segmentation between categories of financial institutions and to develop a deep domestic money market where all economic agents can participate. The monetary authorities actions in declassifying banks as primary and secondary banks, and establishing discount houses and the Ghana Stock Exchange as potential markets where secondary issues could be traded without affecting the sterilization of excess liquidity, reflect this lesson learned.

Among the indirect instruments used are outright sales/purchases of Government and Bank of Ghana securities, or open market operations, transfer of Government funds from the deposit money banks to Bank of Ghana, reserve requirements, and reverse transactions or repos. On a cautionary note, in principle, it makes little difference for immediate volume targets whether the Bank of Ghana in its intervention uses, open market operations, reserve requirements, or refinance facilities or any of the other instruments. However, in practice there are many operational differences between the various instruments. For example, even though they are all indirect monetary management instruments; the costs of these instruments to the Bank of Ghana, to individual banks, and to the banking system can be quite different depending on the instrument used. Furthermore, there are different degrees of flexibility and effective control related to each instrument, e.g, reserve requirements are relatively inflexible and apply only to banks, whereas open market-type operations are very flexible and directly affect only those banks or nonbank economic agents that choose to participate. Bank of Ghana rediscount facilities in turn have quite different degrees of flexibility depending upon their design. Effective control also depends on whether it is Bank of Ghana or the deposit money bank that has the initiative regarding the use of an instrument: with reserve requirements the Bank of Ghana holds the initiative; with refinance facilities the initiative is typically held by the DMBs; in open market operations, it is the Central Bank which initiates the operations, but both parties' decisions affect the outcome. For purposes of

making an informed choice among these instruments and how they could be improved to make monetary control more efficacious, we need to examine their characteristics.

3.2 Bank of Ghana’s Framework For Monetary Management

In its approach to monetary control, Bank of Ghana’s framework is the monetary base approach. As its reason for the redefinition of money supply to M2+, Bank of Ghana used the increase in foreign currency holdings with the DMBs. Unlike the situation in the early 1980s, Ghanaian residents can now hold two main types of foreign currency accounts at the DMBs². Consequently, foreign currency deposits have assumed importance on the balance sheet of the DMBs, representing over 30% of total deposit liabilities of the DMBs by December 1997. With this new target, the money supply, defined as M2+ is determined by the base money or reserve money as follows:

$$M2+ = mB \dots \dots \dots \text{equation 1.}$$

where **B** is high powered money or what Bank of Ghana calls reserve money, and **m** is the money multiplier. Analytically, the money supply, M2+ can be influenced by the money multiplier or/and the reserve money. In practice however, Bank of Ghana’s emphasis is on reserve money or base money. Prima facie, this choice is rational if Bank of Ghana can project the money multiplier fairly accurately over policy periods. Whether Bank of Ghana estimates the money supply accurately depends on the definition of money. With the redefinition of money as M2+ whose constituents are currency, demand deposits, saving deposits, time deposits and foreign currency deposits, the behaviour of money supply multiplier is very crucial in determining the extent to which Bank of Ghana can withdraw or inject liquidity into the system. Analytically, we can derive a money multiplier based on the constituents of money as follows. With currency outside the banking system, the non-bank private sector maintains a ratio, **k**, of cash to demand deposits. It must be emphasized that the **k-ratio** is a behavioural function but for simplicity, it is considered to be constant. This **k-ratio** varies with time and as we see shortly, tends to vary with the decisions of the non-bank private sector. Thus, we have:

$$k = C/D \text{ or Currency Demand deposit ratio} \dots \dots \dots \text{equation 2.}$$

Similarly, all the other constituents of money are defined in terms of demand deposits. It must be noted that these other constituents are defined in terms of demand deposits, because the main channel by which DMBs create credit is by demand deposits.

Thus we define the following ratios:

²See Gockel, A. F. (1998) “Dollarization In Ghana”, Legon Economic Studies, University of Ghana.

- s = S/D or Savings/Demand Deposit Ratio.....equation 3
- t = T/D or Time/Demand Deposit Ratio.....equation 4
- f = F/D or Foreign currency/Demand Deposit Ratio.....equation 5.

Besides these constituents of M2+, we have the role of government deposits in money creation. As we see shortly, Government deposits can be moved from Bank of Ghana to the DMBs or vice versa just to influence the credit creation capacity of the DMBs. Thus, we have government deposits as a fraction of demand deposits, g. That is,

$$g = G/D \text{ or government deposits-demand deposits ratio.....equation 6}$$

Furthermore, by definition, reserve money **B** is currency with the non-bank public (C) and total DMBs reserve cash held either as vault cash at the banks or with Bank of Ghana (R). Thus,

$$B = C + R.....equation 7$$

The cash with the banking system component of the reserve money has two essential elements which tend to influence the conduct of monetary policy. These can be further classified as the non-mandatory and mandatory elements. The non-mandatory element reflects the cash reserve ratio which the DMBs have voluntarily imposed on themselves for prudential purposes. The mandatory requirement is the ratio required by Bank of Ghana to be maintained by DMBs. It is this which actually underpins the Central Bank’s capacity to withdraw or inject liquidity into the system through the banks. With these definitions, we now respecify R as follows:

$$R = r[D + S + T + G + F].....equation 8$$

- where D is demand deposits;
- S is savings deposits;
- T is time deposits;
- G is government deposits; and
- F is foreign currency deposits.

Here, **r- ratio** is the weighted average of reserve ratio against all bank deposits. This **r** is crucial for monetary conduct and is what Bank of Ghana does manipulate over and above the non-mandatory reserves maintained for prudential purposes.

Now, lets recall Bank of Ghana’s definition of money supply and the reserve money equations:

$$M2+ = C + D+ S + T+ F$$

$$B = C + R.$$

Substitute equations 2 and 8 into the reserve money equation to get:

$$B = kD + r[D + S + T + F + G] \dots \dots \dots \text{equation 9.}$$

Equation 9 is reserve money defined sole in terms of the various deposits held by the DMBs. With this, we an now proceed to define reserve money in terms of demand deposits only by substituting equations 3 to 6 into equation 9 to give:

$$B = kD + r[D + sD + tD + fD + gD] \dots \dots \dots \text{equation 10}$$

Equation 10 is the expression of reserve money solely in terms of private demand deposits. Simplifying equation 10, we have:

$$B = D[r (1 + s + t + f + g) + k] \dots \dots \dots \text{equation 11}$$

From equation 11, private demand deposits are made the subject of the equation as follows;

$$D = B/[r (1 + s + t + f + g) + k] \dots \dots \dots \text{equation 12}$$

With equation 12, various relational equations can be defined for the components of money stock in terms the behavioural parameters, s, t, f, g and k. Making the necessary substitutions into the money equation, we obtain the money stock, M2+ defined in terms of reserve money or base money

as:

$$M2+ = mB$$

where

m is the monetary multiplier with **1+ k + s + t + f** as the numerator and **r (1 + s + t + f + g) + k** as the denominator. These are referred to as the behavioural parameters and **r** can be either mandatory or non-mandatory reserve requirements. In the Meade-Tinbergen fashion, whichever of the two is higher is the binding constraint. As we see later, in developed market economies, **r** tends to be more of non-mandatory character than in developing economies where it is very high serving as an instrument of monetary policy. If DMBs should maintain reserves far in excess of mandatory requirements, then the required reserve ratio is not likely to be an effective tool at the disposal of Bank of Ghana. The maintenance of excess reserves by the DMBs means that the bank rate is also not likely to be effective, as the DMBs would not conduct their balance sheet in a manner as to force them to go for assistance from Bank of Ghana as the lender of last resort.

The stability of the multiplier, **m**, depends on all the factors that affect the behavioural parameters

viz, currency ratio; time deposit ratio; savings deposit ratio; foreign currency deposit ratio, government deposit ratio and the reserve ratio. It is these behavioural parameters that Bank of Ghana must track down to be able to have control over m so as to make a meaningful impact on the money supply through changes in reserve money. A cursory glance at the behavior of these behavioural parameters in Ghana's monetary history, shows that the currency ratio can be a problem for monetary management (Gockel, 1995). The currency ratio is affected by the following factors:

- a interest offered by the DMBs on various types of deposits; the more attractive these are, the lower the currency ratio as households will hold various types of deposits offered by the DMBs.
- b level of real income; when real incomes are generally low as they are, coupled with large dependency ratios, cash holdings tend to dominate and therefore increase the currency ratio.
- c the price level of goods and services purchased with cash relative to price level of goods purchased with cheques; this combines with many factors including high costs of cheque clearing to raise the currency ratio.
- d the ratio of taxes to income; the bigger the ratio of taxes to income the greater the incentive to evade tax payments, with tax evaders being likely to conduct a greater proportion of their transactions in currency. This is particularly relevant against the defunct AFRC Decree 17 which forced people to withdraw confidence sensitive monies from the DMBs.
- e general lack of confidence in Cedi denominated assets as a result of macro economic instability and obnoxious legislation.

Bank of Ghana's capacity to inject or withdraw liquidity from the system, using mandatory reserve requirements, depends largely on these behavioural parameters that go to build up the monetary multiplier. In fact, the last point, though explanatory, has raised an important issue for the definition of money as $M2+$. This entails the foreign currency component, which is held only in deposits with the DMBs. As it is, Bank of Ghana has no idea about the foreign currency holdings outside the DMBs which are as good as money, but are not included in the definition of money. This impacts on the ability of the Bank of Ghana to derive a more accurate money supply multiplier. By conjecture, such foreign currency holdings are thought to be as much as what the Banks are holding. Obviously, if this is true, there is much more liquidity in the system than Bank of Ghana is trying to capture with the $M2+$ definition. I do not pretend to have an answer to this problem and it will be necessary to carry out a more detailed analysis of this issue if Bank of Ghana is going to continue using mandatory reserve as an instrument of monetary control.

Worst still, the definition of money supply as $M2+$, has given the impression that the currency-money ratio has fallen. This is not correct, since it is the denominator that has been increased through the inclusion of foreign currency deposits in the money supply. Even if the Currency- $M2+$

ratio is declining, with the redefinition of money, its is still high, averaging about 34%. The high Currency-M2+ ratio is no exogenous constraint on Bank of Ghana. The high ratio is a rational response to well -intentioned but irresponsible laws and policies of Government in the late 1970s and in the 1980s. (Gockel, 1995). Nevertheless, as we argue later, the high currency-money ratios create an in-built constraint on credit creation by the DMBs as the monetary multiplier is kept low. Bank of Ghana will have to revisit these issues if a tractable monetary multiplier is to be derived. Without doing this, the use of mandatory reserve requirements to effect changes in high powered money to the money supply, M2+ will be difficult As it is, the required reserve ratio is only a vehicle for the transmission of base money into money supply. It can make or mar the control of M2+ in so far as Bank of Ghana is reckless not to contain violent changes in reserve money. The intractability of the money multiplier was succinctly put by the Director of Research Department of Bank of Ghana when he wrote as follows:

Another problem associated with monetary programming has been the predictability of the relationship between money supply and reserve money.....In 1994, m was projected to be stable at 2.51. The out-turn had a downward trend. Similarly, the projected paths for m for 1995 to 1997 differed significantly from the actual. In 1994 and 1995, even the direction of m was wrongly predicted. Money supply targets based on the projected m would obviously not be achieved (Wampah, 1999).

It must be emphasized that this problem of intractability of m was before the redefinition of money supply from M2 to M2+. Whilst the M2+ target appears to be a rational choice for the money supply, a closer examination of the components tends to suggest that this monetary target could grossly underestimate what is money and must be controlled to contain inflationary pressures. If we note that there is some general aversion for holding bank deposits with even the conventional M2 definition of money, then it stands to reason that there is quite an unknown amount of foreign currency holdings by residents outside the banking system that Bank of Ghana policy can influence. Such foreign currency holdings can be switched into Cedis with rapidity, or as the evidence generally shows in recent times, used directly in transactions as means of payment. Either way, foreign currency holdings have monetary implications that are largely outside the controlling capacity of the Bank of Ghana. It is therefore pertinent for Bank of Ghana to grapple with the dollarization issue if it has to have sufficient hold on its balance sheet. Having raised these crucial issues that affect the money supply multiplier, we now proceed to examine Bank of Ghana's deployment of the weighted required reserve ratio, r , against total deposits of the deposit money banks as an instrument of monetary control.

3.3 Reserve Requirements: Practice Under Indirect Monetary Control Policy Regime

In recent times, the perception about reserve requirements has changed, from been regarded mostly as non-mandatory instruments of prudential management to mandatory instruments of monetary management. It is true, as we saw earlier when discussing monetary control under directed credit regimes, that reserve requirements can have dis-incentive effects on financial

intermediation as they tend to reduce efficiency and increase the cost of intermediation. Nevertheless, reserve requirements do act prudentially to provide DMBs with sufficient funds to meet any mandatory reserve needs plus whatever excess reserves or working balances that the payment system requires. This was largely the practice before the FINSAP 2 in 1990, when different requirements were applied not only to the different categories of deposits but also to the different banking institutions which were designated as Primary and Secondary Banks.

Although reserve requirements are not a sufficient condition for effective monetary policy, as long as interest rates are adequately flexible, they can nevertheless be helpful to support monetary policy. This is singularly so where financial markets are not deep and interest rates cannot be relied upon for the transmission of monetary impulses, and there is not a strong basis for predicting the money multiplier.

Whilst several analysts argue that reserve requirements are not a market instrument of monetary policy, since they are specified as a ratio to deposits that DMBs must hold with Bank of Ghana, their impact on money supply is nevertheless through indirect means³. Reserve requirements affect the money supply through the DMBs capacity to create credit. Here, the DMBs are now free to manage their assets portfolio the way they want, once the mandatory ratio has been maintained. This is unlike credit ceilings and sectoral credit guidelines which have direct impact on credit and dictate to the banks the composition of their assets portfolio. As we noted above, the DMBs do maintain non-mandatory prudential working balances themselves, but the central bank can use the required reserves as means of withdrawing or injecting liquidity into the system by changing the level of reserves to influence the credit creation capacity of the banks.

In this vein, within the market framework, from March 1990, Bank of Ghana changed from the two-tier system whereby reserves were specified for the different categories of deposits to uniform reserves requirement. The uniform reserves requirement across deposit categories is an improvement on the two-tier system as this tends to equalize the implicit tax to DMBs. Thus, between 1990 and 1997, the required reserves were calculated on the basis of total deposits viz, demand, savings and time deposits. Similarly, the distinction among the various types of banking institutions, Primary and Secondary Commercial Banks, was dropped. Again in April 1997, required reserves were extended to cover foreign currency deposits. This was as a result of the redefinition of money supply from M2 to M2+ to include foreign currency holdings, which was sensible because of the increasing dollarization of the economy. Conceptually, effective monetary management entails that the base for required reserves should include all components of the aggregate being used as the money supply. If the reserve money base should exclude some components of the money supply, the monetary multiplier would not be accurately estimated for forecasting purposes and this would make monetary management ineffective. Consequently, Bank

³For details about the controversies, see Caprio, Gerard and Patrick Honohan eds.(1993), Monetary Policy Instruments For Developing Countries, A World Bank Symposium, The World Bank, Washington D.C.

of Ghana required that foreign currency deposits with DMB should be subjected to the same reserve requirements as Cedi-denominated deposits. In this scheme, the reserves are calculated on the average of deposits for the week. Presently, the reserves are 8% for primary reserves and 35% for secondary reserves with a weekly lagged observance reserve maintenance period.

There are several advantages in the choice of a total deposits base that exclude interbank deposits. First, the DMBs can easily adjust required reserves to changes in deposit. Secondly, the timing phase of the definition of the base, as we noted has changed from daily bases to weekly averages. Defining the base in terms of a weekly average of deposits, reduces the chances of large transactions impacting on the deposit base on particular days. In the same vein, averaging reduces the incentive for the DMBs to maneuver their balance sheets on specific days so as to cheat the system.

The change over from the contemporaneous observance and daily maintenance of require reserves to the lagged accounting basis appears to carry further advantages a fully contemporaneous system requires cash holdings in a particular period to be based on deposit levels in the same period). By this change, required reserves in the current period are based on a past deposit levels. Theoretically, the more contemporaneous the observance, the more effective would monetary management be. In practice, however, if the DMBs normally hold excess cash reserves, as is the norm in Ghana, it is not clear whether a monetary policy change would necessarily be transmitted any more quickly under a contemporaneous system than under a moderately lagged one. On the contrary, if the DMBs should not hold excess reserves, a contemporaneous system may be quite inflexible and require excessively rapid swings in the balance sheets of the DMBs.

Whilst the required reserves policy appears to have been fashioned, taking cognisance of these tenets, however, for foreign currency deposits, the reserves are to be held in Cedis, and not in the foreign currencies. Bank of Ghana's decision that the reserves against foreign currency deposits be held in Cedis is predicated on three arguments, viz; (a) it would be operationally difficult for Bank of Ghana to monitor the various foreign currency accounts at the DMBs; (b) foreign currency reserves may send wrong signals that Bank of Ghana was re-introducing exchange controls; and (c) there was the urgent need to reduce liquidity to stem inflation.

A critical examination of all three arguments tend to suggest that Bank of Ghana is sacrificing long term interest for short term expediency and if this becomes the norm, further distortions may be introduced into the intermediation process, especially for those DMBs that mobilize foreign currencies. The argument that it would be operationally difficult for Bank of Ghana to monitor the several accounts in different currencies is basically weak. Bank of Ghana appears not to have weighed the costs of its operational difficulties against the cost that the DMBs incur in trying to raise Cedis as reserves against foreign deposits. The DMBs are on record as having complained that trying to convert foreign currencies deposits into Cedis, as reserves, makes assets management difficult. Prudential cash reserves management has especially become problematic. This is particularly so with the intractable character of the exchange rate. As the exchange rate changes

against the Cedi, the DMBs have to find more Cedis to comply with the 8% primary reserve and 35% secondary reserve. For a DMB that has accounts of different types of foreign currencies, this could be an exacting task of operational difficulty, and which cost would be translated into higher intermediation costs. Bank of Ghana has only considered the operational difficulty from its own side without regard to those of the DMBs when it directed that reserves against foreign currencies be held in Cedis.

The application of required reserves for foreign currency deposits raises the issues of competitive neutrality and the remuneration of reserves in the design of the reserves requirement as a monetary management tool. Once the required reserves do not conform to general market practices, and to the extent that some DMBs are favoured by some of the required reserves, an implicit tax is imposed on the DMBs discriminated against. As is to be expected, such an implicit tax raises the cost of intermediation and puts those institutions that are subject to the requirement at a relative disadvantage compared to those that are not covered by the policy. This encourages avoidance, evasion and disintermediation, particularly in the type of deposits discriminated against, which in this case are foreign currency deposits.

Analytically, required reserves should generally be changed only infrequently. When financial markets are underdeveloped with respect to depth and resilience, required reserves can be an important monetary management tool to sterilize, at one stroke, a substantial amount of bank liquidity. Reserve requirements are not well suited to dealing with short term swings in liquidity. Consequently, frequent changes in the level of reserves tend to complicate liquidity management by the DMBs. As mentioned earlier, this causes severe strains on the DMBs that have to adjust their Cedi reserves in response to the persistent depreciation of the Cedi against the major currencies held at the banks as deposits. By the directive to keep Cedis against foreign currency holdings, Bank of Ghana is virtually changing the required reserves as often as the Cedi depreciates, sometimes daily.

The maintenance of reserves in Cedis against foreign currency deposits penalizes those DMBs that mobilize foreign currency deposits. Ordinarily, such deposits would have been kept off-shore or outside the banking system. But once the DMBs create instruments to mobilize them, these foreign currencies are now available in the domain of the formal financial sector for transactions, even to be used in SWAPs or reversed transactions. However, the difficulties in raising 8% Cedi cash as primary reserve and 35% as secondary reserve means that DMBs would prefer to hold such foreign deposits as off-shore accounts with correspondent banks. Customers who need foreign exchange could then be provided for through correspondent banking, as the practices of the money transfer programmes such as the Western Union Money Transfer illustrate. Meanwhile, the local market would be strapped of foreign currencies since disincentives are created for the banks not to hold the foreign currencies in Ghana..

Furthermore, not only will the DMBs call in loans as an easier way to raise Cedis to meet the required reserves, with further crowding out of “private sector”, but Cedis raised to comply with

required reserves would mean that interest rates would be distorted further, especially in terms of the spread between lending and borrowing rates⁴. DMBs make loans largely in Cedis for domestic transactions. Indications are that the foreign accounts pay negligible interest on deposits. However, Cedi deposits are supposed to attract reasonable interest rates so that the level of savings would increase. If DMBs are constrained in such a way that a large fraction of their Cedi resources are sterilized as reserves, then lending rates would have to be very high relative to deposit rates, and ultimately, the implicit tax is borne in large measure by the customers through this higher margin between lending and deposit rates than would otherwise be the case. This cannot be better emphasized than was done by the Governor of the Bank of Ghana when he writes that:

The good showing of banks, that is, the considerable profits that banks have been posting in recent years, it may be pertinent to note, is in most cases a reflection more of high intermediation margins rather than improved operational efficiency or good asset quality of the banks. As a matter of fact, the high profits tend to mask the apparent low efficiency levels and sometimes poor quality of assets in these banks (Bank of Ghana Annual Report, 1998, p.72).

A further argument by Bank of Ghana not to require reserves in foreign currencies, is that it would imply the re-introduction of exchange controls to exacerbate the lack of confidence in the financial system. This argument is untenable and shows that Bank of Ghana lacks clarity in its policies. Desirable policies exact compliance and the basis of compliance is awareness creation and information disclosure, especially as to the intended objectives of policy actions. Bank of Ghana would have to mount awareness creation education about its policies so that people will not have misconceptions about them.

Indeed, the DMBs are rather clamouring for a change to holding the reserves in foreign currencies. If the holding of Cedi reserves against foreign currency deposits is made solely on grounds that it would smack of re-introduction of exchange control then Bank of Ghana would not have educated the public sufficiently about the policy. What about reserves held against Cedi deposits? The lack of confidence in the financial system is much more in terms of Cedi denominated assets, as shown by the increasing process of dollarization. Transparency is what is called for if the public is to accept the policy implications of holding reserves in foreign currencies against foreign currency deposits. Bank of Ghana officials are themselves aware that the DMBs would prefer to hold their

⁴Discussions with officials of EcoBank and Standard Chartered Bank revealed that loan portfolios have to be reorganized to take care of this. Marginal beneficiaries of credit are being weeded out of the loans system under a scheme of 20-80 Rule. By this, only the 20% of the customers who generate 80% of banks profits would be retained.

reserves in foreign currencies⁵.

The third argument for holding the reserves against the foreign currency deposits is also a non sequitur. By this argument, Bank of Ghana wanted to reduce liquidity in the banking system “urgently”. This appears to be Bank of Ghana’s overriding reason for the policy. However, Bank of Ghana has erred in this policy, by defining liquidity in terms of only Cedi-denominated deposits in so far as the required reserves are concerned. The policy negates Bank of Ghana’s conception of liquidity that informed it to redefine money or liquidity as M2+. By Bank of Ghana’s insistence that Cedi funds be raised against foreign currency holdings as reserves, Bank of Ghana is inadvertently saying that foreign currency deposits are no longer money! What about the foreign currency deposits that depositors can draw on by cheques, and for that matter meet debt and offer contracts? Bank of Ghana would have to take a second look at this policy, especially the 8% Cedi reserves against foreign deposits as these offer no returns to the DMBs.

In terms of the level and extent of required reserves, the ratios required, 8% and 35% respectively on primary and secondary reserves, appear to be very high compared to the experiences of the developed market economies. Theoretically, required reserves should generally be based on the level of prudential reserves needed for clearing purposes, which according to Bank of Ghana’s estimation is about 2% of deposits. In this case, the 8% is too high since interest is not paid on this reserves, be they against cedi deposits or foreign currency deposits. Such high reserves without interest accentuate interest rate spreads against depositors.

However, an intriguing phenomenon is the action by the DMBs to retain reserves that are quite above the required ratios. This practice tends to suggest that there is not a creditworthy category of borrowers out there that the banks can conveniently lend to, which isn’t surprising given the high real interest rates borrowers would have to pay. The banks are voluntarily holding excess cash. Not surprisingly, the DMBs are not aggressive in mobilizing savings. As tersely stated elsewhere on this theme⁶:

The banks’ demand for base money, their cash ratio, depends on the maturity structure of deposits, the frequency of cash withdrawals, the opportunity cost of holding cash as measured by day to day interest rates, and the banks’ aversion to risk. As these will differ from bank to bank, so will each bank’s desired cash ratio. However, a uniform cash ratio is

⁵At a dissemination of an EAGER-USAID sponsored research on 5th June, 2000 at Novotel Hotel in Accra, the researchers raised this issue and officials of the DMBs revealed in the presence of Bank of Ghana Officials that they have made several representations to Bank of Ghana against holding Cedis as reserves for foreign currency deposits.

⁶ Griffiths, B. (1979), “The Reform of Monetary Control in the United Kingdom”, The City University Annual Monetary Review, October 1979, pp. 29-41.

not necessary for monetary control; all that is required is that banks' demand for cash are reasonably stable (Griffiths, 1979, p. 39)

Consequently, even if Bank of Ghana had not required such high ratios from DMBs, it is likely that they themselves would have maintained high prudential reserves to offset any potential increases in the level of their non-performing assets. This would appear to suggest that Bank of Ghana's mandatory reserves are not effective. This can be reconciled within the adverse selection and moral hazard framework (Stiglitz and Weiss, 1981: and Greenwald et.al, 1984)⁷. Apparently, Bank of Ghana has only provided an avenue for the DMBs to invest mobilized resources with minimal intermediation. On this theme, the Governor of Bank of Ghana has this to say:

Compliance with reserve and other ratios was generally satisfactory, especially the capital adequacy ratio which was maintained above the statutory 6% by all bank. Most Banks have also posted large profits for 1997, a development in the right direction. However, Bank of Ghana has noted with some concern the rather low performance of banks in the area of savings mobilization. Furthermore, lending operations of the most banks seemed to have been skewed in favour of big borrowers in the trading sector. Our observation was that the bulk of loanable funds available to most of the banks were invested in risk-free government paper, leaving the productive private sector hardly catered for (Bank of Ghana Annual Report, 1997, p.4).

What is important is that it is Bank of Ghana's policy framework that has provided the opportunity to the banks to manage their assets portfolio the way they do. It is in this vein that reserve requirements should be reviewed, but not to be relied upon as a major instrument of monetary policy. Table 4 shows the required reserves and the actual reserves returned by the DMBs between 1997 and 1999.

⁷Stiglitz, Joseph and A. Weiss, 1981, Credit Rationing in Markets With Imperfect Information, American Economic Review, 71, No. 3: Greenwald, Bruce, Joseph Stiglitz and Andrew Weiss, 1984, Information Imperfections in Capital Market and Macroeconomic Fluctuations" American Economic Review, 74, pp. 194-199.

Table 4 Reserve Requirements Of Deposit Money Banks: 1997-99
(in Percentages)

Period	Liquidity Reserve Ratios Of Deposit Money Banks						
	Primary Ratio		Secondary Ratio		Total Reserve Ratio		
	Minimum	Actual	Minimum	Actual	Minimum	Actual	Excess
January 1997	10	13.69	47.00	46.87	57.00	60.57	3.57
April 1997	8	10.07	35.00	55.25	43.00	65.31	22.31
June 1997	8	8.01	35.00	45.87	43.00	53.89	10.89
Sept. 1997	8	8.74	35.00	43.00	43.00	51.74	8.74
Dec. 1997	8	11.79	35.00	48.30	43.00	60.10	17.10
January 1998	8	9.88	35.00	51.19	43.00	61.07	18.07
April 1998	8	10.22	35.00	52.94	43.00	63.15	20.15
June 1998	8	10.52	35.00	52.99	43.00	63.51	20.51
Sept. 1998	8	10.50	35.00	52.44	43.00	62.94	19.94
Dec. 1998	8	12.44	35.00	52.34	43.00	64.78	21.78
January 1999	8	9.82	35.00	51.17	43.00	60.99	17.99
April 1999	8	10.45	35.00	58.27	43.00	68.72	25.72
June 1999	8	10.78	35.00	56.69	43.00	67.47	24.47
Sept. 1999	8	10.76	35.00	52.02	43.00	62.78	19.78
Dec. 1999	8	12.50	35.00	49.30	43.00	61.80	18.80

Source: Bank of Ghana, Quarterly Economic Bulletin, October - December, 1999

The table 4 shows that DMBs still maintain excess reserves, which at December 1999 was as high as 19%. Bank of Ghana would need to take a look at the secondary reserves to allow the DMBs to manage their assets without recourse to riskless government papers as the principal source of their profits. Apparently, DMBs are mobilizing funds only to channel them into government papers. This is no effective financial intermediation. Instead of using the DMBs as captive markets in this direction, Bank of Ghana could provide the incentives to non-bank private agents to take these papers. Both in terms of the analytical frame of the money supply multiplier and its operational practices and out-turn, this policy instrument appears to be an ineffective tool and the Bank of Ghana should look elsewhere for other instruments of monetary management. That DMBs

maintain, for whatever reasons, reserve assets in excess of the minimum mandatory requirements, means that the multiplier process has been truncated: DMBs are not creating as much money as they should within the mandatory reserves required by Bank of Ghana. If there is an excess money supply problem, Bank of Ghana would have to examine credit to Government since there is definitely insufficient credit to the private sector, as the DMBs currently maintain reserves in excess of what Bank of Ghana estimated to be given out as credit to private economic agents. The bane of monetary management is not from private sector credit but from public sector deficit and the mechanisms to finance it. This is where the monetary multiplier approach to monetary management appears not to be helpful in the prediction and management of the money supply in Ghana. As it is now, mandatory reserve requirements are introducing their own distortions into the financial system without promoting effective intermediation. This takes us to the conduct of Open Market Operation to control reserve or base money.

3.4 Management of Reserve Money

By definition, as we saw earlier, reserve money gives rise to M2+ through the multiplier. In the extreme case, if the reserve money can be sufficiently controlled so that Bank of Ghana allows the DMBs to engage in prudential monetary management, then Bank of Ghana would be making some head way in the conduct of monetary policy. Reserve money is expressed by Bank of Ghana as:

$$B = NFA_{BOG} + NDA_{BOG} \dots\dots\dots (equation 13)$$

$$NDA_{BOG} = NCG_{BOG} + NIBP_{BOG} + OIN_{BOG} \dots\dots\dots (equation 14)$$

where

- NFA_{BOG} is the Net Foreign Assets of Bank of Ghana;
- NDA_{BOG} is the Net Domestic Assets of Bank of Ghana;
- NCG_{BOG} is Net Credit to Government by Bank of Ghana;
- NIBP_{BOG} is Net Indebtedness of Bank of Ghana to the banks and the non-bank private sector; and
- OIN_{BOG} is represents Other Items Net of the Central Bank.

Using the framework in equations 13 and 14, Bank of Ghana employs as its main instruments of monetary control to influence reserve money, Open Market Operations and Discount Window Operations. In recent times, other tools have been introduced. These are reverse transactions in Cedi-denominated assets and foreign exchange, transfer of Government deposits from the DMBs to Bank of Ghana, and outright purchases and sales of foreign exchange. Years on since these market-oriented policy instruments have been adopted, increasing doubt and scepticism have developed about the efficacy of Bank of Ghana’s broad monetary strategy. We examine these instruments and the reasons of the scepticism in turn.

3.4.1 Monetary Management by Open Market Operations

Open Market Operations (OMO) have become the favored instrument of monetary policy among the indirect instruments of monetary management in recent times. Several reasons account for this preference, with the notable ones being the flexible nature of the instrument as Bank of Ghana could buy and sell securities for whatever amounts it wants, and it can even be carried out several times within a single day. Furthermore, OMOs are conducted at the initiative of the monetary authorities to influence the cost and availability of credit, whereas in the case of discount policy for example, it is the banks that initiate when and how much to borrow. As a market instrument, OMOs are voluntary transactions at market determined yields and do not have the implicit tax effects that characterize reserve requirements. Thus, Bank of Ghana introduced OMOs into monetary management in 1986 with a weekly primary auction in treasury bills; later in 1988, Bank of Ghana Bills were also introduced.

OMO works indirectly to regulate the Central Bank's balance sheet, in order to regulate the supply of base money therefrom. In this regard, base money or reserve money as Bank of Ghana chooses to call it, is the operating target of monetary policy. It is determined, in any year, in the context of a financial programme, with broad money supply (M2+) as the intermediate target, and inflation as the ultimate target. The amount of bills offered for sale are based on the difference between projected target reserve money, bills to be retired and public sector deficits, the two together making the public sector borrowing requirements (PSBR).

At inception, weekly auctions of Treasury and Bank of Ghana Bills were held on Fridays (now, they are held on Wednesdays). At the auction, pricing is based on the multiple price auction system with bids arranged in descending order. That is, bids are arranged in ascending order of quoted rates so that the lowest rates were first allotted. In terms of pricing arrangement, Bank of Ghana allocates offers to bids according to the higher prices until the total offer is exhausted. Each bidder pays the price quoted and is allotted the bids applied for. A weighted average price is declared so that investors can purchase on tap without taking part in the auction. In March 1996, however, the tap was closed to all DMBs and open only to the non-bank public. Apparently, access to the tap between auctions tended to discourage the development of a secondary market in the instruments. Consequently, the tap was closed to the general public as well in 1997. It was however felt that tap sales should continue at Bank of Ghana's Currency Centres in the regions outside Accra. Whatever the reason, this action does not take into account the fact that people can make trade offs, for example, not taking part in the auction only to wait and go to the regions to avail themselves of the tap sales.

Furthermore, since March 1996, Bank of Ghana uses the wholesale auction system, and tenders are restricted only to the DMBs, the Discount Houses and licensed brokerage firms. These are designated as Primary Dealers. Conceptually, the Primary Dealers are market makers in Government and Bank of Ghana financial instruments, and are expected to underwrite the whole issue or offers of such instruments at tenders. The offers are advertised on Tuesdays in the national

newspapers. The previous weeks offers and bids alongside the prices or yields are also published. A weekly weighted average price is calculated as the price at which offers are sold at taps at Bank of Ghana's Currency Centres in the regions. The Primary dealers are expected to make firm price quotations so that they would serve as a nucleus of a secondary market. In practice, however, the envisaged advantages are yet to be realized. First, the auctions are typically under-subscribed. The secondary market has also failed to emerge, apparently because investors can always have access to tap sales at Bank of Ghana's Currency Centres in the regions outside Accra. In addition, some of the DMBs have instituted minimum acceptable bids from the non-bank public. For example, at least one Bank requires the minimum acceptable bid by a primary dealer to be ₵5million - an amount not generally accessible to many who would have wished to invest in treasury bills. Indications are that there are not enough incentives to the primary dealers, especially as anecdotal evidence suggests that there is no transparency in the determination of the treasury bills rates. Here, Bank of Ghana appears to review and adjust its "cut-off" in the auctions to achieve some target rate of interest. In such circumstances, Bank of Ghana does not achieve its sales targets to be able to mop up the necessary excess liquidity.

Another basic weakness of the system is the restricted nature of suitably designated financial instruments that are traded on the money market. Before 1997, the instruments were Government Treasury Bills and Bank of Ghana Bills. The former were issued to meet public sector borrowing requirements and the latter were aimed at monetary management. Conceptually, the distinction was helpful in as much as bills for monetary control were different from those going to finance Government budget. It facilitated the monitoring of monetary accommodation of fiscal deficits by Bank of Ghana and the other sectors. By 1996, however, this distinction was dropped and only treasury bills are now used for both monetary management and public sector borrowing requirements.

The official reason for the withdrawal of Bank of Ghana Bills is that, Government was becoming increasingly concerned over interest payments on these bills. What is not clear is whether Government's concern was only over interest payments on Bank of Ghana Bills or on Government debt issues as well. Whatever it is, the merger does not make much of a difference since in the final analysis, it is Government that must raise the resources to amortize the instruments, be they Bank of Ghana bills or Government debt instruments. This is particularly so if we note that the bids at the auctions are not typically enough to meet the amount offered for sale. In such circumstances, whatever was designated as Bank of Ghana Bill meant for sterilization had to be eventually released to Government to meet its PSBR.

Even if auctions are conducted solely for purposes of monetary control, it is Government and not Bank of Ghana that must bear the interest cost. Otherwise, Bank of Ghana will have to decapitalize itself to be able to sustain open market operation. Indeed, the phasing out of Bank of Ghana Bills has brought into sharp focus the monetization of Government debt. Discussions with Bank of Ghana Officials suggest that the difference between the deficit and the actual issue represents Bank of Ghana's monetary intervention. To redress this imbalance, Bank of Ghana has opened an OMO-

Tbills Account into which proceeds to be sterilized are paid. Despite the laudable intention of this account, it has raised the issue of lack of transparency in the reconciliation between the stock of bills in the register and what actually goes to finance PSBR. It must therefore be emphasized that if Bank of Ghana is to avoid excessive accommodation of Government expansionary fiscal deficits, Government must ensure that its public sector requirements are met from the sale of treasury bills only without recourse to Bank of Ghana for overdraft facilities. Furthermore, Bank of Ghana must not purchase any Treasury Bills, whether they are new issues or old stock. The Primary Dealers must be used in these cases to buy the primary issues or the secondary bills. This way, the secondary market development could be fostered.

As pointed out earlier, within the framework of IMF financial programming, Bank of Ghana uses Net Domestic Assets of Bank of Ghana, NDA_{BOG} and/or Reserve Money to attain the desired level of $M2+$ as the intermediate target. It must be emphasized that Bank of Ghana sets targets for $M2+$ and domestic credit by reference to expected inflation and output for each base period. Invariably, there has been very little fine-tuning to account for annual fluctuations in food output and availability especially, and the level of public sector borrowing requirements in view of the volatile nature of Government revenues. Not surprisingly, Bank of Ghana appears not to be succeeding at the efforts in monetary control and inflation management .

Whilst the theoretical underpinnings of Bank of Ghana's reserve money approach specified in equations 13 and 14 lend themselves in the application of financial programming, the approach does not make effective distinction between the various financing mechanisms of the fiscal deficits or surplus. This is very important because the way in which fiscal deficits are financed has important consequences for the efficiency of that policy (Sliber, 1970; and Blinder & Solow 1973 and 1974). Generally, fiscal deficits can be financed by increased taxation, issues of Government debt or bonds to the non-bank private sector, or by an expansion in the money stock.

Apparently, in Ghana, for structural and country specific problems, increased taxation could not be conveniently adjusted to finance public sector deficit, at least in the short run. The options readily available are bond issues and money financing. This financing process can be expressed in an accounting identity as:

$$PSD = OMO + NMD - MAT + ECF + \Delta B \dots\dots\dots(\text{equation 15})$$

where

PSD = public sector deficit;

OMO = operations in marketable debt to the non-bank private sector;

NMD = non-marketable government debt;

MAT = additional finance required to repay maturing debt;

ECF = sales of foreign reserves or finance acquired to accommodate external flows;

ΔB = increase in public sectors monetary liabilities of base money.

Equation 15, representing the public sector deficit equation, can be re-arranged in terms of reserve money as follows;

$$\Delta B = PSD + MAT - OMO - NMD - ECF \dots \dots \dots \text{(equation 16)}$$

Equation 16 is how base or reserve money can be financed. Consequently, when equation 16 is substituted into the money supply equation, $\Delta M2+ = m \Delta B$, this gives an expression of changes in the broadly defined money supply as a function of changes in reserve money which originates with the public sector deficit. By this, the relationship which lies behind the monetization of the public sector deficit has been specified, and serves as a guide to the monetary authorities in their efforts at monetary management. To the extent that the deficit is not covered by the sale of debt or non-debt items to the non-bank private sector, then it will be financed through an expansion of the money supply. By implication, public deficit per se is not a bad thing; it is the financing arrangements that make or mar it. Equation 16 shows that there are a number of important factors that influence the size of the monetary base. The extent to which Bank of Ghana can effectively control the monetary base depends on the degree to which it can control the various elements in equation 16. Having said this, it must be noted that in Ghana, Government has a problem with both the public sector deficit (PDS) and government debt maturing to be repaid. The latter is especially important as over 30% of government expenditures goes to debt and interest payment on domestic debt.

Furthermore, the financing of the public sector borrowing requirement is largely from Bank of Ghana and the DMBs; financing sources that have significant impact on reserve money, ΔB . As typically noted in Bank of Ghana Annual Reports, credit to government is the single largest source of increase in the money supply. For example, in 1997, Bank of Ghana summed this up as follows:

The principal sources of the expansion in money supply were net credit to government and credit to the private sector, recording increases of $\text{¢}533.9$ billion (219.6%) and $\text{¢}389.6$ billion (57.2%) respectively (Bank of Ghana, 1997 Annual Report, p.15)

Table 5 shows the sources of change in money supply, $M2+$ between 1994 and 1999. The table shows that Government is the single largest source of change in $M2+$. One interesting change in the sources of money supply is the impact of cocoa financing. Once upon a time, the main source of variations in liquidity was related to cocoa financing; not only was the magnitude of the flows significant but it was financed by the banking system. Now, Government is the main source of variations in liquidity as shown in the above table.

Table 5 Sources of Change In $M2+$: 1994 To March 1999 (¢b)

Year	Govt	Cocoa Financing	Public Institutions	Private sector	Net Foreign Assets	Other Items
1994	-34.6	-21.4	111.3	85.4	147.8	17.3
1995	-66.8	0.2	17.9	120.0	277.4	129.1
1996	347.7	1.0	-4.2	287.6	204.1	-186.3
1997	533.9	78.2	-56.1	389.6	135.9	-173.6
1998	349.4	-39.4	17.6	428.7	-52.6	-172.7
1999*	804.9	-37.8	90.0	516.6	-809.0	-327.5

Source: Bank of Ghana records. * First quarter 1999 data.

Although the private sector is also a significant source of change in M2+, much of the credit to the sector is on behalf of Government. That is, much of the credit to the private sector is proxy borrowing on behalf of government in respect of contract works that had to be pre-financed by private sector borrowing from the banking system. In fact, this has led Government to window dress its budgets, declaring surpluses where deficits are the actual out-turn: the 1995 budgetary out-turn was a surplus of ¢52.6 billion and yet, the Minister of Finance and Economic Planning noted in the 1996 Budget Statement (page 6) rather incongruously that;

Mr Speaker, in spite of the road sector accounting for ¢114 billion representing over 38 per cent of development expenditure, there is still enormous pressure to provide the necessary road infrastructure for our development. **A very worrying development in this sector is that despite these levels of expenditure there are still substantial arrears of payments to be settled for work done** (emphasis mine).

This quote shows that payments have not been made in respect of work done in the current year. What would have been the status of the budget if these amounts were paid?

Table 6 shows the typical holding structure of public debt in Ghana for the period December 1997 and March 1999. One emerging trend in the structure of debt holding is the increasing role of the DMBs. That is, prima facie, the DMBs are becoming a captive market for government debt and this has implications for the money supply process. In any case, the fact that the banking system as a whole, Bank of Ghana with the DMBs, is the major holder of Government debt, holding over 75% of Government total debt, means that the extent of monetization of government debt is very high. This trend must be checked and ways and means must be found to bring in the private non-bank

agents as the principal holders of government debt. Equations 15 and 16 have indicated. Borrowing from the banking system, especially Bank of Ghana and DMBs with excess cash holdings is inflationary financing and leads to increases in reserve money.

Table 6 Holdings Structure Of Public Debt (Including Bank of Ghana Debt) Millions of Cedis

Period	Bank of Ghana	DMBs	Non-Bank Public	SSNIT	Total
1995	611617.4	275.0	193328.7	70364.8	875585.9
1996	1915521.0	74125.0	584191.0	54925.0	2628762.2
1997	1924806.1	736998.1	786496.9	52503.8	3500804.9
1998	1919205.5	1417824.6	1086968.2	52503.8	4476502.1
1999	2175350.7	2270874.5	1279548.8	71502.7	5797276.7
Relative Shares In Total (%)					
1995	69.9	0.0	22.1	8.0	100
1996	72.9	2.8	22.2	2.1	100
1997	55.0	21.1	22.5	1.5	100
1998	42.9	31.7	24.3	1.2	100
1999	37.5	39.2	22.1	1.2	100

Source: Bank of Ghana Records. Total may not add up to 100 because of rounding.

As we see later in the analysis of the exchange rate as a nominal anchor to inflation, Germany's experience vividly demonstrates that monetization of government deficits by the Weimar Government was largely responsible for the hyperinflation which ensued. An erosion in Germany's tax base, reparations expenditures, accumulated war expenditures, rising interest and debt repayments on the existing public sector debt all made for a very unstable situation in Germany after the First World War. Germany's public sector debt was 65% of total expenditures in the 1920-21 period. This deficit was financed from money creation with grim consequences for Germany (Jackson, 1990). However, subsequently Germany has been able to contain these imbalances, and its fiscal and monetary policies are such that it is now one of the World's low-inflation economies, and has even served as an anchor to the Exchange Rate Mechanism in the European Union. Germany achieved this feat through fiscal discipline in subsequent years, taking into account its domestic needs without an external anchor.

3.5 Interest Rates Structure

The interest rate structure appears to be generally directed by Bank of Ghana. This stems from the fact that Bank of Ghana, on behalf of Government, has maintained a dominant presence in the money market and has not been able to vary its rates appreciably, even in periods when inflation was reported to have significantly fallen. By the conduct of open market operations, Bank of Ghana seeks to control the size of deposits and currency directly, by persuading private agents to hold fewer assets issued by the DMBs. This, Bank of Ghana does by manipulating the rate of interest on alternatives to holding these instruments, typically treasury bills and other Government securities. Table 7 shows that both Bank of Ghana and treasury bill rates have consistently been higher than deposit rates of the DMBs. Theoretically, if the banking system were competitive, once Bank of Ghana raised interest rates of its instruments, DMBs would also immediately increase the rate they pay on bank deposits, especially when the DMBs have alternative investment opportunities for funds with higher rates of return. But as it is, the DMBs, and indeed other financial institutions, do not match Bank of Ghana's interest rate rises from open market operations. Apparently, Bank of Ghana's actions have introduced distortions into the interest rate structure, militating against effective intermediation. Thus, even when Bank of Ghana has been able to sell securities, the thinness of the market has risked a very strong interest rate effect which private entrepreneurs see as undesirable for investment opportunities. Lending rates appear to be excessively high, relative to Bank of Ghana's bench mark rates.

The emergent interest rate structure has brought to the fore the divergence between the desired paths in money and credit growth rates. For long term economic growth prospects, Bank of Ghana has to adapt its liquidity management techniques in order to influence money and credit growth through interest rates. Bank of Ghana can develop an array of rates at which it is prepared to make loans or buy short term assets of viable industrial enterprises without subjecting them to rates of interest that were designed solely to curb monetary growth. The newly industrialized countries of East Asia have used similar interest rate differentials to support key enterprises that could be destroyed completely with temporary monetary management practices, albeit, within the market based approach to monetary control (Amsden, 1989; Caprio and Honohan, 1991)

Table 7 shows the trends in inflation and interest rate structure between March 1995 and December 1999.

Table 7 Real Interest Rate Structure: March 1995 To December 1999 (In Percentages)

Year	Inflation	Real Treasury Bill Rates	Real Bank Rate	Real Lending Rate	Real Borrowing Rate	Nominal Spread
March 1995	43.43	-7.27	-3.09	-5.34	-15.41	14.44
June 1995	61.85	-17.83	-14.12	-16.11	-24.81	14.79
Sept 1995	69.80	-17.26	-18.14	-19.73	-28.33	14.61
Dec 1995	70.82	-17.75	-15.12	-16.99	-26.38	16.04
March 1996	64.79	-14.44	-12.01	-13.40	-22.51	15.19
June 1996	48.42	-4.66	-2.30	-3.62	-14.08	15.53
Sept 1996	36.51	4.46	6.22	4.79	-6.59	15.53
Dec 1996	32.66	7.64	9.30	9.54	-3.87	17.80
March 1997	29.22	10.51	12.21	12.85	-1.52	18.57
June 1997	32.70	7.61	9.27	9.89	-3.92	18.32
Sept 1997	27.73	11.80	13.52	14.48	-0.18	18.85
Dec 1997	20.46	18.28	20.37	21.73	5.99	18.95
March 1998	20.26	16.00	20.57	21.61	5.81	19.00
June 1998	21.84	11.00	19.01	19.21	1.77	21.25
Sept 1998	17.38	11.88	20.97	20.12	3.94	19.00
Dec 1998	15.75	9.50	18.36	21.38	0.65	24.00
March 1999	13.74	10.63	16.05	20.67	2.87	20.25
June 1999	10.30	12.83	15.14	21.26	4.94	18.00
Sept 1999	13.10	11.39	13.60	21.20	1.52	22.00
Dec 1999	13.80	15.54	11.60	19.95	-0.70	23.50

Source: Bank of Ghana records. Real interest rates are defined as $(1+R/1+P^*)^{-1}$ where R is the nominal rate and P* is inflation .

Bank rates and Treasury bill rates have generally remained very high relative to borrowing rates during the period. This was in spite of the fact that reported inflation has fallen in several periods. This was particularly so since December 1996 when there appeared to be significant deceleration in inflation. Expectedly, the treasury bill rates should have fallen to reflect the inflationary trend. Rather, the bank rate and treasury bill rate were virtually twice the rate of inflation between March 1996 and December 1999. Much more disturbing was the trend in the lending rates of the DMBs. These rates were also very high and as reported earlier, much of the profits posted by the banks appeared to have come from the large spread between lending and borrowing rates. It is interesting to note that since June 1998, the spread is even greater than inflation. Indeed, it is only the borrowing rate that has remained largely negative in real terms within the period. Treasury bill rates, bank rates and lending rates were all generally positive in real terms. Not surprisingly, financial deepening measured as M2+/GDP was still very low, generally below 20%.

This structure of interest rates has raised several issues, mainly about the transparency in the conduct of the weekly auctions and the subsequent determination of the treasury bill rates. Anecdotal evidence suggests that Bank of Ghana fiddles with the auction so as to maintain the rates at predetermined levels. As the rates are not market determined the primary dealers do not have the incentives to purchase the total supply of bills offered for sale. What Bank of Ghana has to reckon with is the fact that there is a complex link between Government's fiscal deficits and its public sector borrowing requirements on the one hand, the rate of growth of money supply, however defined, and the level of interest rates. With a given public sector borrowing requirement, either the money supply or the level of interest rates is determined in the market; Government cannot determine both simultaneously, let alone Bank of Ghana attempting to influence the exchange rate as well. If Bank of Ghana has targeted the Money supply, it must necessarily allow the market, especially the primary dealers to interact in the market to determine the interest rates if the management of money is to succeed.

Indeed, Bank of Ghana can set the rate of interest as the operational target, and not the money supply or other monetary aggregate. However, interest rates are not ideal as long term goals, especially in an undeveloped capital market environment such as Ghana. First, interest rate targets are nominal and all sorts of problems arise in relating them back to real rates. Secondly, in a country characterized by dynamic instability and where external shocks and structural imbalances in the food sector do increase inflationary pressures, targeting nominal interest rates becomes intractable as the real rates of interest tend to decrease. The unsuitability of interest rates as targets, vis-a-vis reserve money or any other monetary aggregate for that matter, cannot be more pithily expressed than was done by Friedman⁸ when he stated that:

Trying to control the money supply through *fiscal policy...and interest rates* (Quoting the

⁸ Friedman, Milton, (1980), Treasury And Civil Service Committee On Monetary Policy: Memoranda, Vol. 1, pp. 55-66 HMSO, London

Green Paper on Monetary Control) is trying to control the output of one item (money) through altering the demand for it by manipulating the income of its users (that is the role of fiscal policy) or the prices of substitutes for it (that is the role of interest rates). A precise analogy is like trying to control the output of motor cars by altering the incomes of potential purchasers and manipulating rail and air fares. In principle, possible in both cases, but in practice highly inefficient. Far easier to control the output of motor cars by controlling the availability of a basic raw material, say steel, to the manufacturers - a precise analogy to controlling the money supply by controlling the availability of base money to banks and others (Friedman, 1980, p.58).

As we see later, monetary management is further compounded by the constraint imposed by the relationship between international capital flows, the exchange rate and the domestic money supply. As it is, now that Ghana has avowed to pursue market based policies and once stringent capital controls have been removed, Bank of Ghana must choose between either an exchange rate or a monetary target. In this case, without preempting further discussions, since Bank of Ghana has a conflict situation between money supply and interest rates, and then, between exchange rates and money supply, once it is prudent to concentrate on monetary target in the earlier conflict choice, then it stands to reason that same must be chosen and exchange rates left to be market determined. The crux of the argument is that the three fundamental prices in the economy, product prices as reflected in inflation, interest rates and exchange rates are all largely driven by the money supply. Consequently, it is just prudent that Bank of Ghana should concentrate on managing the money supply so that the various prices would be market determined.

These constraints are fundamental in monetary management, and in a liberalized regime with active liability management by DMBs, both the private sector and the banks can force Bank of Ghana into conflict situations between exchange rate, interest rates and monetary targets. This is particularly acute in recent times because of the apparent insensitivity of the DABS to credit demands of the private sector as reflected in high lending rates and the low or generally real negative rates paid to depositors, which in turn impact on the demand for foreign exchange as a convenient store of value.

Consequently, the over-riding constraint on monetary management in Ghana is the multitude of potential and real conflicts of objectives and instruments that arise when the markets are liberalized and the DABS are not constrained by direct control mechanisms. This therefore demands consistency among various strands of economic policy. In particular, the domestic constraints impose a requirement of consistency among (i) monetary and fiscal policy; (ii) monetary and interest rate objectives; and (iii) monetary and exchange rate objectives. As we argue at length later, the practical way to resolve the potential conflicts is for the monetary authorities not to have any interest rate or exchange rate objectives, especially when international trade is excessively liberalized. Admittedly, the literature is replete with arguments that fixing the exchange rate could

be a key factor in arresting inflation⁹. Typically, Calvo and Vegh (1992) have tended to argue that the existence of a high degree of dollarization in an economy suggests that the exchange rate rule should be adopted in that economy. These arguments, however, are unsettled, as the debate between the choice of an exchange rate and the money supply as nominal anchor cannot be generalized across countries. As we see shortly, four major considerations are very important in making an informed choice among alternative anchors. These are the nature of shocks that are faced by the economy; the extent to which the different policy instruments can be controlled; the dynamic adjustment path of the economy that the choice of such instruments induces; and the intrinsic degree of credibility of the respective choices. It is these issues that we now turn to in the rest of the paper.

⁹ See for instance, Fischer, Stanley (1988) "Real Exchange Balances, the Exchange Rate and Indexation: Real Variables in Disinflation", Quarterly Journal of Economics, 103 (March), pp.27-49; and Agenor, Pierre-Richard and Peter Montiel (1996) Development Macroeconomics, Chapter 8, Princeton University Press.

4 Foreign Exchange Operations In Ghana

The term exchange rate policy is quite elusive because it focus on a price variable that is affected by a variety of policies, rather than the policies themselves. For instance, when we consider monetary policy, fiscal policy or commercial policy, these tend to focus on the instrument of policy namely, money or interest rates, taxes or transfers and government expenditures, tariffs or quotas. In the case of exchange rate policy, however, what is emphasized is the elements of a number of policies which influence the exchange rates. Some of these include the choices of exchange rate system, monetary policy, intervention policy and indeed, exogenous shocks as well as fiscal policy (Freedman, 1993). In so far as the capacity to have direct effect on the exchange rate is concerned, it is the choice of exchange system, monetary policy and intervention policy which are under the control of the monetary authorities to manipulate to achieve desirable objectives. It is this three which we concentrate on in this paper as exchange rate policy. Among them, the choice of exchange rate system is fundamental to the discussion since it has profound implications for the scope of monetary policy and then intervention policy. We examine Ghana's experience and prospects for the future in this light.

Until the inception of the Economic Recovery Programme in 1983, Ghana's exchange rate system was the fixed regime, pegged to the dollar, with infrequent devaluations¹⁰. Thus, between 1960 and 1966, the Cedi-Dollar rate was $\text{¢}0.71=\text{US\$}1$ and between 1967 and 1970 it was $\text{¢}1.02=\text{US\$}1$; due to a devaluation of the Cedi in 1971 and later a devaluation of the US\$ in 1973, the Cedi-Dollar rate was $\text{¢}1.15=\text{US\$}1$ between 1973 and 1977, and then $\text{¢}2.75=\text{US\$}1$ between 1978 and September 1983. Between 1983 and 1986, the system was on the crawling peg, or the TABLITA. Since 1988, the exchange rate system may be described as flexible, with the licensing of Forex Bureaux, introduction of auction trading and its subsequent conversion into an inter bank market. With these changes, authorized dealers, DABS and Forex Bureaux now deal in international vehicle currencies, buying and selling to the general public in what can be described as a floating exchange rate regime. As the Governor of Bank of Ghana puts it:

Mr President, the exchange rate policy of the Bank of Ghana is largely guided by the gross foreign reserves build-up which must exceed the equivalent of three months of imports. The Central Bank is therefore not committed to any nominal value for the Cedi. The flexible exchange rate policy of the Government is to ensure that exchange rate movements are guided by changes in economic fundamentals, and in monetary and fiscal policy (Bank of

¹⁰Until the change in 1983, the exchange rate regime was not only fixed: surrender laws, rationing and a plethora of exchange controls were in place to enforce compliance. Government Budgets were characterized by fiscal deficits which were accommodated by expansionary monetary policies with the consequence of intractable inflationary pressures. The exchange rates became overvalued, penalizing exporters and subsidizing importers. There emerged a buoyant black market in foreign exchange.

Ghana Annual Report, 1998, p.67).

One main feature of the exchange rate between 1983 and 1999 is the general persistently inordinate nominal depreciation of the Cedi against the US Dollar; for example between 1998 and 1999, the rate has fallen by 33%. In fact, the depreciating has continued unabated into year 2000; Cedi-Dollar rate has depreciated from $\text{¢}3500 = \text{US\$}1$ in December 1999 to $\text{¢}5820 = \text{US\$}1$ in June 2000, representing 66.30% nominal depreciation. Table 8 shows the trend in annual exchange rates and their rates of depreciation between 1983 and 1999.

Naturally, the persistent depreciation has been of concern to Bank of Ghana, and various attempts have been made to ensure a stable exchange rate regime. This tends to negate Bank of Ghana's avowed declaration of non-commitment to defending the nominal value of the Cedi. What these interventions imply is that, Bank of Ghana is not necessarily committed to a flexible exchange rate regime where market forces are to determine the exchange rate. Bank of Ghana intervenes to get committed to some nominal value of the Cedi, by its actions. The implications of these interventions are discussed at length later in the paper. Presently, we examine the ways by which Bank of Ghana attempts to defend the nominal value of the Cedi apart from monetary targeting.

Table 8: Trends In The Annual Exchange Rates: 1983 To 1999

Year	Exchange Rate ¢ Per \$	% Change In ¢ Per \$ Rate	Year To Year Inflation	M2+ Growth Rate %	Reserve Money Growth Rate %
1983	30.03	991.90**	122.80	42.00	41.10
1984	50.00	66.50	39.70	39.90	35.80
1985	59.88	19.80	10.30	62.30	58.30
1986	90.09	50.05	24.60	53.90	60.00
1987	175.44	94.70	39.80	49.70	41.30
1988	232.56	32.60	31.40	50.60	54.00
1989	303.03	30.30	25.00	28.00	21.90
1990	344.83	13.80	35.90	20.10	3.50
1991	390.63	13.30	10.30	26.20	0.20
1992	520.83	33.30	13.30	52.97	88.40
1993	819.67	57.40	27.70	34.65	4.90
1994	1052.63	28.40	34.20	53.17	78.90
1995	1449.28	37.70	70.80	40.74	35.10
1996	1754.39	21.10	32.70	41.62	44.80
1997	2250.39	22.70	20.80	41.98	33.40
1998	2346.00	4.10	15.70	17.60	16.70
1999	3500.70	33.00	12.60	17.33	13.11

Source: Bank of Ghana Records.

** The Exchange rate in 1982 was ¢2.75 = US\$1. With the devaluation, this gave a fall in the Cedi-Dollar rate of 991.9%

Primarily, as quoted above, Bank of Ghana's exchange rate policy is based on reserve targeting. When reserves exceed the target, indications are that Bank of Ghana embarks upon outright foreign exchange sales to mop up excess liquidity in the market. In such instances, Bank of Ghana sells foreign exchange to supplement treasury bill auctions. Furthermore, Bank of Ghana has introduced foreign exchange swaps into the foreign exchange market in 1997 for the maintenance of a more stable exchange rate. Foreign exchange swaps are reversed transactions in foreign exchange

markets, just as repos or RPs. Swaps or repos are reverse transactions which entail the sale of foreign exchange or securities and an agreement to repurchase them later at a fixed price. Swaps make liquid funds available to the seller for the agreed duration of the transaction. By its nature, the relation between the current price and the agreed future price establishes an implicit exchange rate or interest rate for what is more or less a secured loan. Hence, by this instrument, Bank of Ghana offers swaps solely to the DABS; this involves the exchange of US Dollars for a Cedi denominated, negotiable swap instrument issued by Bank of Ghana with a 91-day maturity profile. When Bank of Ghana buys foreign exchange in a swap with domestic currency, it injects liquidity into the market. Similarly, in a reverse transaction, liquidity is taken out of the market. A principal advantage of reversed operations is that, by buying a Government security and contracting to resell it at a compromised price, Bank of Ghana retains the initiative in terms of amount, maturity and timing in spite of the terms of the underlying security.

Conceptually, for speedy action, central banks often turn to outright foreign exchange sales/purchases or swaps. In such an instance, swaps can remove or inject substantial amounts of liquidity into the system if the participants in the foreign exchange market are large. Whilst foreign exchange transactions are swift to remove or inject liquidity into the market they nevertheless have their shortcomings. First, the foreign exchange market in Ghana has only a handful of large participants; anecdotal evidence suggests that they could not make an instantaneously appreciable impact on the liquidity position with the foreign exchange transactions. Thus, foreign exchange swaps are not sufficient for withdrawing or providing liquidity on a broad base from the banking system in Ghana. As it is, the initial success of foreign exchange sales or purchase hinges on the relative size of the foreign exchange market which implies that much liquidity can be drained or injected into the market swiftly.

Secondly, the monetary authorities must be able to convince the private agents that they will be able to defend the declared parity. However, Ghana's experience has shown that buying foreign exchange spot with a commitment to resell it at an appointed time is risky because of the volatile nature of Ghana's foreign exchange earning. The situation is made worse, especially at times, when speculation is rife and panic attacks are launched on the currency. Once private agents lack confidence in the monetary authorities ability to defend the anchor, especially as they are well-informed about the economic fundamentals, foreign exchange sales or swaps cannot sustain the exchange rate, because private agents will speculate that devaluation is inevitable. Speculative attacks will occur, eventually forcing the abandonment of the anchored regime. If the monetary authorities attempt to impose controls on foreign exchange transactions as a remedy, a parallel market with a more depreciated exchange rate will emerge. Ghana is currently experiencing all these facets since the beginning of the millennium. All attempts to sustain the exchange rate by selling foreign exchange have so far flopped. Once Bank of Ghana is not able to finance the surge in imports, and rationing ensues in the official foreign exchange market, as the Minister of Finance's actions purport to do, fluctuations in the parallel market rate may severely distort the signal that a fixed exchange rate was intended to convey to price setters in the economy.

Although as a result of sales from foreign exchange reserves the exchange rates maintained a temporary semblance of stability, the depreciations which followed showed that such nominal anchors were fictitious. In any case, much as Bank of Ghana would like to use foreign exchange swaps or outright sales as an instrument to stabilize the exchange rate as an anchor to inflation, indications are that Bank of Ghana's reverses were generally below or just at target levels. Table 9 shows the net foreign assets of Bank of Ghana and the DABS between 1994 and 1999. Column two of the table shows Bank of Ghana's net foreign position. The main feature is the negative net position of the Central Bank. This does not augur well for Bank of Ghana to attempt foreign exchange sales to prop up the exchange rate. The economic fundamentals are such that fiscal discipline and monetary policy are better instruments to ensuring stability in prices and exchange rate.

Ghana's economy is generally subject to stochastic shocks that are very difficult to predict in practice. The price of its principal exports, cocoa and gold are subject to some of the worlds most volatile commodity markets, Consequently, basing a nominal anchor on expected disturbances would not be an optimal policy strategy. It would be extremely difficult to defend a pre-defined nominal value of the Cedi with such economic fundamentals. Unless the variability and the likelihood of occurrence of some kinds of shocks are deemed very low, from a pragmatic view point, a more preferred strategy to the foreign exchange anchor is the money supply anchor. In fact, even more financially developed economies have lost in this type of exchange rate management. As we see shortly, monetary authorities in the ERM lost such gamble in 1992, and Britain had to be forced out of the ERM after devaluing.

One thing which is clear so far is the need to contain liquidity. Here, monetary management would entail the use of open market operations in domestic securities as most appropriate to meet the trend needs in liquidity changes. For the withdrawal of liquidity, whatever funds are realized in the sale of securities must be sterilized. Sterilization involves action by Bank of Ghana to prevent changes in the reserves position of the DABS from having secondary effects on domestic monetary conditions. It is not prudent monetary management when the funds realized from the sales of OMO instruments, are recycled into the system. If such is the case, the cash reserves of the DABS would change and negate the intended effects of the bill purchases.

Table 9 Net Foreign Assets of Bank of Ghana and Deposit Money Banks: 1994-1999 ₵m

Period	Bank of Ghana	Deposit Money Banks	Total
March 1994	-337232.20	145906.30	-191325.90
June 1994	-293439.70	169005.50	-124434.20
September 1994	-221693.10	172335.70	-49357.40
December 1994	-153629.80	189541.60	35911.80
March 1995	-157148.80	195007.30	37858.50
June 1995	-318841.50	181057.10	-137784.40
September 1995	-146410.30	176133.40	29723.10
December 1995	94757.20	90982.90	185740.10
March 1996	136544.40	99935.00	236479.40
June 1996	46264.20	138507.60	184771.80
September 1996	-23625.50	69092.90	45467.40
December 1996	137059.10	55848.30	192907.40
March 1997	236667.40	621611.80	858279.20
June 1997	-26220.70	711931.70	685711.00
September 1997	204725.60	696529.20	491803.60
December 1997	177161.40	66270.30	839866.70
March 1998	139399.40	559131.40	698530.80
June 1998	64537.60	534575.70	599113.30
September 1998	-16846.10	626803.80	609957.70
December 1998	315587.70	528685.90	844273.60
March 1999	246482.40	301987.80	548470.20
June 1999	-59194.30	223189.40	163995.10
September 1999	-224093.40	259405.40	35312.00
December 1999	22474.00	87633.20	110107.20

Source: Bank of Ghana Records, Ghana Monetary Survey 1990 -1999, Table 1.1

5 The Exchange Rate As Nominal Anchor

Analytically, to use the exchange rate as a nominal anchor against inflation, the exchange rate framework would be a fixed exchange rate which would act as a nominal anchor upon monetary policy. Since the over-riding objective of monetary policy is containment of inflation, the exchange rate becomes the nominal anchor that limits the rate of inflation. By this nominal anchor regime, the exchange rate of the Cedi would be fixed to, say, the US Dollar or to the currency of another country that has a historical track of low rates inflation. Implicitly, the anchor currency has a monetary authority that has *the demonstrated capacity* to ensuring low inflation. A nominal anchor would then ensure a reasonable degree of price stability depending on the anchor country's inflation. Given the importance of expectations in determining inflation, whether adaptive or rational, it is desirable that private agents expect a low rate of inflation. That is, inflation policy will most likely work, only if people have confidence in it or if it exudes credibility. Instead of inflationary expectations being determined by domestic inflation, they will be determined by the anchor country.

Theoretically, commitment to the nominal anchor, either in the form of a fixed Cedi-Dollar rate for an extended period of time or to a pre-announced rate of depreciation in tune with some expected/planned inflation may bring credibility and discipline to Ghana's monetary management programme to achieving an inflation free process of economic growth. This argument is very appealing to those who argue that the Government and Bank of Ghana have appeared to lose control of the management of the Ghanaian economy. The exchange rate is linked to the money supply just as the rate of interest. Hence, if the exchange rate is fixed, it is impossible to retain complete control over the other variables, just as the choice of a monetary target involves the sacrifice of the other variables. Hence, reckless fiscal indiscipline could be contend. Thus, under such conditions, a nominal exchange rate anchor would appear to offer advantages.

The use of a nominal anchor would mean that when Ghana faces real shocks to the terms of trade, adjustments to the real exchange rate must occur through differential price movements rather than through nominal exchange rate changes. The central bank would have no freedom to control its foreign exchange reserves, as it has agreed to accept or provide foreign currency against Cedis on demand. With regards to the commitment to discipline, the nominal anchorage of the Cedi exchange rate would enjoin Bank of Ghana not to create domestic credit, beyond what the economy's demand for real money balances and foreign exchange reserves can support. That is, if the nominal anchor is to be effective, domestic monetary policy must be sufficiently restraining to avoid the emergence of unanticipated inflation and to maintaining a sustainable current account balance. By implication, money supply has become endogenous and cannot be used as an independent policy instrument to achieve a wider range of objectives. The monetary theory of the balance of payments becomes singularly important. Otherwise, excessive credit creation would engender loss of reserves and foreign exchange crisis, which would force the country to go off the anchor regime.

Indeed, the attraction of the nominal anchor is that it is well defined and unambiguous. It is thus preferable to a general commitment to fight inflation and reduce it to a single digit without clear indications as to how this would be achieved. The nominal anchor is a strong commitment to intervene in the foreign exchange market so as to ensure the maintenance of the fixed exchange rate. When the Cedi is overvalued, Bank of Ghana must purchase Cedis or sell foreign exchange to keep the exchange rate fixed. Expectedly, the purchase of Cedis will cause money supply to fall, and also cause the interest rates on Cedi denominated assets to rise. By this action, Bank of Ghana would tend to lose international reserves. Thus, the exchange rate would remain fixed to the anchor only as long as there are sufficient reserves or external borrowing capacity to support it. Excessive domestic credit creation that increases liquidity in the economy, would generate a steady drain of reserves and, eventually force the currency off the anchor, perhaps by speculative attacks as the experiences of the currencies that were anchored to the Deutschmark in the Exchange Rate Mechanism (ERM) have demonstrated.

Introduction of nominal anchor regime would raise several issues, especially for its implementation in Ghana: purchase of domestic currency, Cedis, would tend to reduce money supply and deposit rates on Cedi-denominated assets would have to rise. Furthermore, continuous intervention means loss of foreign exchange reserves. How sustainable are these trends?

Admittedly, if Bank of Ghana sterilizes the Cedis purchased from the sale of foreign exchange, then the money supply will indeed fall. However, it is not generally the practice for borrowing or deposit rates to increase with the reduction in money supply, as the trends and large interest rate spreads have shown. With the redefinition of money supply as M2+, Cedi-denominated and foreign currency deposits are virtually perfect substitutes. In such an instance, a sterilized exchange rate intervention would not be able to maintain the exchange rate at the declared parity to the anchor. If the economic fundamentals are wrong, as they are currently in Ghana, and the exchange rate is overvalued, a sterilized purchase of Cedis will still leave the expected return on Cedi-denominated deposits below the expected return of foreign currency deposits at the declared nominal anchor. Consequently, the pressure for a depreciation of the Cedi is not removed; the pressure still persists and actually calls for further intervention. If Bank of Ghana responds by purchasing more Cedis, it will just keep on losing international reserves until it finally runs out of reserves. Bank of Ghana will then be forced to let the value of the Cedi find its own market value against the other currencies.

Whilst this is the case, the question that begs itself, and indeed has implications for the efficacy of the nominal anchor is whether the attainment of low inflation should be the only target of monetary policy, and for that matter exchange rate policy? This question is particularly relevant for a developing economy such as Ghana where structural transformation and unemployment are of equal importance. With these other macroeconomic objectives, is it likely that Government can discipline itself to exact credibility from the various economic agents? That is, can Government reconcile the conflicting demands made on it without political expediency?

The issue is whether Ghana has the capacity and the fiscal will to exact the discipline required for

the deployment of the exchange rate as the nominal anchor for inflation! Constraining Government to a nominal anchor means that domestic credit creation is also constrained. If the credit creation constrain is not adhered to then a crisis would ensue. With other macroeconomic objectives, some net domestic credit creation can be justified by the growth in real balances. Similarly, money supply can increase when foreign exchange earnings improve as a result of improved terms of trade. The reverse of these scenarios is equally applicable. But with commitment to maintaining the fixed exchange rate, domestic credit creation needs necessarily be constrained to ensuring discipline and credibility.

Ghana's experience in these scenarios suggest that if the past is anything to go by, discipline is something which could not easily be enforced on the fiscal front. The labor market has been a prime mover in derailing Government commitments, inadvertently, though. Collective bargaining agreements have invariably been based on adaptive expectations, formed by previous years inflation rates or past failures. Though adaptive, these expectations tend to be entirely rational, as the labour force has come to realize that government commitments are not credible. This is particular so in the case of inflation targets.

As is the practice, Government invariably tends to monetize its fiscal deficits as Bank of Ghana provides funds directly to finance budget deficits. In some cases whilst all sorts of schemes are used to conceal government borrowing, in the final analysis, the monetization of Government debt comes out as an important source of monetary impulse in the economy. In this case, treasury bills are sold in the market and once Bank of Ghana does not sterilize the proceeds, credit is expanded as a consequence of fiscal deficits. Fiscal policy has not been compatible with predetermined nominal exchange rate in Ghana's history. The fiscal authorities have invariably discarded the nominal anchor as a disciplining mechanism, so that monetary policy was forced to accommodate the fiscal indiscipline. Whatever form they took, the pressures to expand credit to Government tended to over-ride all other considerations, especially monetary constraint. Thus, government itself has fueled the inflationary pressures under fixed exchange rate regimes in Ghana, with the result that the official parity become over-valued. The overvalued exchange rate then served as a subsidy on imports and a tax on exports. Foreign exchange earnings are reduced. Worst still, a fiscally driven expansion of money supply engenders a strong demand for foreign exchange far in excess of the supply of foreign exchange at the nominally anchored rate. This is more so, when inflationary pressures dictate that wealth owing units hold foreign currencies in preference to the Cedi as a hedge.

Clearly, credibility depends on peoples perception as to Government's capacity and ability to maintain discipline in its budgetary *figures as well as targets*. This is very important if we note that Government has substantially not only failed to realize its budgetary targets in the past, but indications are that reported figures do not reflect what is on the ground¹¹. Furthermore, Government appears not to act in ways that give credence to its actions and policies. Especially, in

¹¹ For details, see CEPA Reports on the economy of Ghana, various issues.

any programme to contain inflation, the first important aspect of the credibility problem relates to the policy measures around which the programme is formulated, and the degree to which they are consistent and sustainable. Presently, private agents or stakeholders including Association of Ghana Industries, Private Enterprises Foundation and TUC, inter alia, are generally skeptical about Government's commitment to programmes because several compromises arrived at after deliberations at national economic forums at Akosombo (twice in 1996 alone) and later at Accra in 1997 are yet to be implemented by Government. For instance, Government's objective to reduce inflation to single digit has over the years lost credibility because private agents were quick to realize the expansionary fiscal stance of Government's budgets, and the way these deficits were window dressed when Government has huge sums of arrears to pay on works already done. Once the private agents are not convinced about the structure of government's policy preferences and once the reputation of the policy makers themselves are being questioned, lack of confidence and imperfect credibility sets in to derail whatever programmes may be put in place.

Credibility is necessary for the success of a set of policy measures because the impact of policy depends in large measure on how the stakeholders or private agents change their actions in response to the targets. If private agents are convinced that a policy is a nine day wonder or unlikely to be adhered to then the policy is unlikely to work. The import of this argument cannot be better put as was done by Keynes¹² when he writes that:

Thus a monetary policy which strikes public opinion as being experimental in character or easily liable to change may fail in its objective...The same policy, on the other hand, may prove easily successful if it appeals to public opinion as being reasonable and practicable and in the public interest, rooted in strong conviction, and promoted by an authority unlikely to be superseded (Keynes, 1936, p.203).

A second general requirement for the efficacy of a nominal anchor regime, is that the exchange rate be credible, so that the various markets, product, labour and foreign exchange are convinced that the rate of inflation in the domestic economy will approximate that of the anchor country's inflation. To elicit the full credibility benefit of a nominal anchor rate, the monetary authorities have the unenviable task to convince the various facets of the market that the anchor is virtually irrevocable.

Whereas the implications of the failure of credibility in the products and labour market are traceable directly to budgetary indiscipline, and vice versa, failure of credibility in the foreign exchange market has its own connotations, some of which need only to be perceptions. Failure in the foreign exchange market can stem from mere perception, which need not be real, to engender speculation that can in turn lead to a crisis, through a run on the currency. Attempts to prop up the exchange rate in such a situation may be underway, when speculators bring about quickly, by forces majeure,

¹²Keynes, J. M. (1936), The General Theory of Employment, Interest and Money, Macmillan, London.

a devaluation. The experiences of the Exchange Rate Mechanism of the European Monetary System and some Latin American countries are worth citing here to buttress the point. By 1990, most European countries anchored their currencies to the Deutschmark. The singular factor binding these countries was the fact that their currencies were to be anchored to the Deutschmark to ensure that local rates of inflation converge to that of Germany's, since the Bundesbank had low-inflation credibility. Indeed, the inflation rates of the countries started converging on Germany's rate of inflation. For example, the inflation rate of France fell from 13% in 1980 and 1981 to 6% in 1985 and then to 3% by 1992. Similarly, Italy's inflation dropped from 20% in 1980 and 1981 to 11% in 1984, and then to 6% in 1992. However, because of the differences in economic fundamentals of the respective countries and because of the actions Germany had to take to sustain its growth whilst maintaining its record of low inflation, the nominal anchor to the Deutschmark collapsed in several countries.

Whilst several factors were responsible for the speculative attacks on the EMS currencies that caused the breakdown of the ERM as a nominal anchor, the fact remains that there were significant differences in the economic fundamentals of the various countries beyond inflation. In particular, the anchor country had to take measures to see to the smooth re-unification of East and West Germany without derailing the economic fundamentals. In order to maintain Germany's economic growth path and to get monetary growth under control whilst ensuring that inflation was still low, the Bundesbank raised German interest rates to near double digit-levels. On the other hand, there was a recession in Britain and unemployment in France. Consequently, these countries found it unattractive to increase their interest rates. Moreover, inflation rates in Britain, Spain and Italy failed to converge to the anchor countries inflation rate. Worst still was the fact that the US was in a recession and monetary expansion was resorted to with the subsequent depreciation of the Dollar and the implied appreciation of the currencies that were anchored to the Deutschmark. To compound issues, the Danes voted to reject the Maastricht Treaty whilst there were doubts that France would also reject it. Consequently, these factors combined to create a credibility gap about the commitment of countries to the EMU.

Against this background, the realization by speculators that Britain and the other countries would soon devalue their currencies increased the expected return on the Deutschmark. Thus between August and September 1992, heavy speculative attacks were made on many ERM currencies including the Pound Sterling, French Franc, Spanish Peseta and Italian Lira. These countries had to intervene by raising interest rates and by reducing their reserves to show that they were committed to supporting the nominal anchor. For example, the need for Bank of England to intervene to raise the value of the Pound Sterling became much greater and required a huge rise in British interest rates. Bank of England had to increase the interest rate from 10% to 15% but this was not enough to stem the speculative attack. Come Black Wednesday 16 September, Britain and Italy had to withdraw from the ERM with the Pound Sterling depreciating by 10% against the Deutschmark, the nominal anchor. Similarly, the speculative attacks forced the devaluation of the Italian Lira by 15% and the Spanish Peseta by 5%. To defend its currency, the Swedish Central Bank was forced to raise its daily lending rate to the ridiculous level of 500%. Had it not been for prior prudent monetary management in France and assistance from Germany, the French Franc

would have moved from the anchor with disastrous consequences for the ERM.

In any case, before the various currencies found their market levels after moving from the anchor, the British, French, Italian Spanish and Swedish central banks had intervened to the tune of US\$100 billion in addition to the Bundesbank's own intervention of US\$50 billion to keep the ERM together. It must be emphasized that the attempts to keep the ERM together was costly with the speculators winning the battle; George Soros speculative fund alone made a profit of at least US\$1 billion (Corden, 1994 and Mishkin, 1995).

In similar vein, the experiences of some Latin American countries that used the US Dollar as an anchor further reflects the unsustainability of such nominal anchor regimes, especially once the economic fundamentals are inconsistent with the policy being pursued.. Argentina and Mexico, among others, fixed their exchange rate to the US Dollar to internalize low rates of inflation. However, in 1994, Mexico had to abandon the anchor. Obviously, the scheme was not sustainable as the resource capacity of Mexico could not supply the necessary foreign currency at the fixed rate, as the economic fundamentals were wrong and the central bank could not pursue an independent monetary policy. As Mexico attempted to maintain the fixed exchange rate, the foreign exchange reserves were run down and the US had to assist with massive doses of foreign exchange to support the stabilization effort

Ghana's own attempts at intervention in defense of the foreign exchange rate are replete with the lack of capacity to sustain fixed exchange rates. When Government intervened, there was some initial semblance of stability in the rates. However, as soon as the Government stops selling foreign exchange, the exchange rate tumbles uncontrollably with disastrous consequences. For example between 1997-1998, the monetary authorities sustained the exchange rate by selling foreign currency so that by 1998 the exchange rate depreciation over the previous years was 4%. When the market was left to supply and demand conditions, the rate depreciated by 33% in 1999 and has subsequently gone out of control, having depreciated from c3500.70 per one US Dollar in December 1999 to c5800.00 in June 2000. Writing on the performance of the exchange rate in the 2000 Budget Statement, the Minister of Finance had this to say:

After the slowdown in the rate of depreciation in 1998, the Cedi depreciated by 33% in 1999 to close the year at c3500.70 per US Dollar. The rate of depreciation was steady in the first ten months of the year but increased sharply in November.

What the Minister did not add was the fact that the steady rate of depreciation occurred in spite of active intervention, both administratively forcing rates on Forex bureaux and at times selling of foreign currency by Bank of Ghana (purchasing of Cedis). Consequently, it is doubtful what Government intended to achieve by the interventions. As it is, these interventions created artificial rates that did not reflect the economic fundamentals. The currency was overvalued, and a strong parallel market has emerged in foreign currencies. It is an open secret that although the Forex

Bureaux have prices for Dollars, they do not have them to sell. On the other hand, Dollars are available on the parallel market at prices ranging between ¢6800 and ¢8000, depending on how urgent and what denominations demanded. The recent window dressing by the law enforcement agencies making arrests of black marketeers in foreign exchange in Accra in February is a clear testimony of the divergence of the official rates from the market rates.

Germane, a nominal anchor exchange rate can also be vulnerable despite the fact that monetary policy is not systematically misaligned. This is particularly so in countries that have volatile export and import structures. Short term spontaneous or windfall capital inflows may create false conditions which may cause policy makers to relax domestic credit conditions. Such action may further lead to unsustainable wage and cost increases. This could weaken the country's competitiveness and causes unsustainable drain on reserves over the longer period. The recent increases in petroleum prices were preceded by windfall gains to non-oil producing countries such as Ghana. Similarly, Ghana had windfall gains on Cocoa and Gold exports before the recent drops in their prices. However, these windfall gains were not sterilized to smoothen out the cycle to maintain Ghana's competitiveness. Part of the stability observed in the Cedi-Dollar rates before the tumble could be explained by this windfall gains. As the proceeds were not sterilized, the Cedi appreciated above competitive levels. Thus when the burst came and people realized this, well-judged attacks were made on the currency by speculators with the Cedi-Dollar depreciating over 80% between December 1999 and June 2000. In a speech delivered at the Annual Dinner of the Chartered Institute of Bankers, the Governor of the Bank of Ghana had this to say on this theme:

The next issue I want to raise tonight is about the rapid continuous depreciation of the Cedi in the foreign exchange market. This is basically a reflection of underlying demand and supply imbalance as well as market imperfections and malpractice. Rapid monetary expansion over the past five years has pushed up aggregate demand for goods and services at a time when local production has fallen short of demand. **On the supply side, foreign exchange inflows have been constrained by fluctuations in export earnings, uncertain foreign aid flows and inadequate foreign direct investment.** This phenomenon has put severe pressure o

resource inflows. That is, the supply of foreign currency increase relative to the demand as the experience of Germany has shown in the ERM. This is equivalent to devaluation **but on the capital account**. Whilst the developing countries necessarily have to operate on the merchandise accounts to devalue to make their commodities competitive to be able to earn more foreign exchange, developed countries can maintain the exchange rate and can increase interest rates to attract foreign resources. Thus the stability in the exchange rate in developing countries can be achieved, at least over a period of time, through the capital account, whilst the developing countries have to work primarily through the current account.

Developing countries such as Ghana whose export commodities have limited responsiveness to price changes in the short run, cannot use interest rate manipulations to bring in resources by the day. Indeed, not only is Ghana's capital market undeveloped for interest rates to be used to attract foreign resource inflows, but more importantly, its current account structure is primarily based on commodities whose output cannot be quickly increased in response to relative advantageous price changes. With such balance of payments structure and undeveloped financial superstructure, it would be more prudent for Ghana to pursue an independent monetary policy directed at achieving broader objectives; the exclusive objective of low inflation could indeed be illusive as the means are not available to sustain a nominal anchor. Admittedly, there is an argument in favour of using a fixed exchange rate commitment as a nominal anchor for an inflation-prone economy like Ghana so that credibility and discipline could be exacted of the system. Nevertheless, the exchange rate would still have a pro-equilibrium role for real targets, especially in response to adverse external shocks that call for a real depreciation that would not ordinarily be readily achieved through flexible domestic prices and wages. In any case, the experiences of countries that have failed in the anchor system indicate that the costs of failure during foreign exchange crises could be grim.

While, arguments for a nominal foreign exchange anchor are appealing; it must be borne in mind that since the shocks that tend to disturb Ghana's economy are fundamentally external and environmental, the choice of a monetary target to manage inflation and other economic objectives is preferred to the exchange rate as a nominal anchor. As it is, the money supply is linked to the exchange rate and the interest rate, just as it is linked to inflation. These are the fundamental prices that significantly affect the allocation of resources one way or the other. To have one of these prices as the overriding objective will hurt the others, especially in an economy like Ghana with so many structural imbalances and bottlenecks in all the key sectors including food sector, and export and imports markets.

6 Repurchase Agreements Or REPOS

In 1998, Bank of Ghana introduced repurchase agreements or repos “to enhance the central bank’s control over bank reserves, and to permit banks to better manage their liquidity. A repurchase agreement is a temporary open market purchase and is an especially desirable way of conducting a defensive open market purchase that will be reversed shortly. When Bank of Ghana wants conduct a temporary open market sale, it engages in a matched sale-purchase transaction in which it sells securities to the DABS who agree to sell them back to Bank of Ghana at a predetermined future date

Although reversed transactions are typically very short term in nature, Bank of Ghana uses them as a basis of promoting the development of a long term market in securities. As it is now, outright open market operations in domestic securities are short term, 91 days and 182 days mostly. Bank of Ghana does not have as rich a market of first rate long term securities, as these are more exposed to interest rate variations in an intractable inflationary environment.

With a reverse transaction, the principal advantage is that by selling a Bank of Ghana security and contracting to repurchase it at an agreed price, the monetary authorities retain the initiative in terms of amount, maturity and timing, regardless of the conditions of the underlying security. For example, Bank of Ghana can do a one day or one week repurchase agreement with a 5 year bond as an underlying security. Some developing countries including Tunisia have perfected this whereby the authorities have in effect securitized part of the central bank’s loan portfolio by allowing some loans, presumably to high-quality risks, to serve as the underlying basket for repos. In fact, there is much to be gained by Bank of Ghana in stepping up the use of repos; not only will these make liquid funds available to it for sterilization over an agreed period of transaction, but the relation between current price and the agreed future price would establish an implicit interest rate for what could be thought of as a secured loan. Reverse transactions can be implemented without much effect on the price of the underlying security, and they have most of the advantages and characteristics of a secured loan without having to be made at the posted rate.

It must be emphasized that the dearth of first class collateral in Ghana makes reverse transactions particularly attractive. Bank of Ghana can decide to make any asset eligible for repos on a bilateral basis as it has started to do with the DABS. But to promote width, depth and resilience of the money market, Bank of Ghana may do well to entice acceptance by a wide range of market participants in active trading in reverse transactions. In fact, one way of reducing the dependence on reserve requirements ratio is by promoting the use of repos. Bank of Ghana can negotiate with or open dialogue with the big firms and private agents who normally have large deposits at the DABS as a way of achieving wider participation. The Bank Supervision Department of Bank of Ghana has the returns of DABS and knows the largest depositors in the banking system. This can serve as a nucleus for effective transactions in repos based on more broad participation.

7 Transfer Of Government Deposits

In October 1997, the monetary authorities decided that all accounts of the Government should be transferred from the DABS to Bank of Ghana. The official explanation of Bank of Ghana about this new policy directive was that, the transfer of the accounts to Bank of Ghana would improve Governments financial position with the Central Bank. By the transfer, Bank of Ghana noted that;

by the end of the year it had helped to increase government deposits with some salutary effect on net credit to government. This measure helped improve the monetary control process and also improved government position with the central Bank, reducing the need for additional borrowing by government. (Bank of Ghana Annual report, 1997, 3).

Analytically, shifting government deposits between deposit money banks and Bank of Ghana is another monetary policy instrument by which the authorities can influence liquidity conditions. A rise in DABS' share of government deposits increases bank liquidity just as do expansionary open market operations. However, the effectiveness of this instrument depends largely on the distribution of government deposits among the DABS.

Historically, Ghana Commercial Bank had the franchise to be the Government's banker in districts or areas that Bank of Ghana had no offices. Since Ghana Commercial bank had an office in each district throughout the country, it became the main custodian of Government accounts. It was not until the financial liberalization when Ghana Commercial Bank's franchise was virtually modified that some of the other DABS started holding Government accounts, in any case, the bulk of Government accounts were held by Ghana Commercial Bank. Consequently, with the October 1998 directive to DABS to transfer their accounts to Bank of Ghana, it was Ghana Commercial Bank that was most hit. Consequently, this policy instrument has suffered from selectivity in its impact. If we note that market shares of banks have changed and the predominant position enjoyed by Ghana Commercial Bank was largely due to its holding of government accounts, then it stands to reason that the bigger DABS have not suffered equally as Ghana Commercial Bank. Ideally, if the transfer of accounts to and from Bank of Ghana is to be an effective monetary policy instrument, then the procedure needs to be governed by a framework that includes consideration of the distribution among banks, the remuneration of the deposits, and the security that government receives for its deposits. Shifting Government deposits neither requires nor promotes the development of the money market. Consequently, it is not an instrument to be used often. If Bank of Ghana is to use it repeatedly, especially if liquidity would want to be introduced into the system, then this can be done on competitive deposit rates rather than give a franchise to some banks as the sole custodians of government accounts.

8 Ways To Improve The Conduct Of Open Market Operations To Affect Monetary Demand

Generally, two things are required for the effective conduct of open market operations viz, (i) Bank of Ghana must have control over its balance sheet and (ii) there must exist a good professional money market.

Whilst the first requirement appears sufficiently clear, one thing which will tend to constrain Bank of Ghana in losing control of its balance sheet is a fixed or a nominal anchor exchange rate regime. In this case, Bank of Ghana is obliged to deal at that rate with any one who comes with currency to exchange. Similarly, it must give them Cedis when they bring foreign exchange. These tend to increase the other side of Bank of Ghana's balance sheet. The two items for Bank reserves and Currency are reserve or base money. Consequently, as long as the exchange is anchored, there is the potential for Bank of Ghana to lose control over its balance sheet. Unless Bank of Ghana can set the nominal anchor at the clearing rate for market participants, it will surely lose control of its balance sheet.

Secondly, Bank of Ghana must advise Government to separate debt policy from monetary policy. By this, Bank of Ghana should negotiate with Government as to how the public sector borrowing requirement would be financed. That is, debt policy must be distinctly different from monetary policy in its objective and how to deal with the realized funds. If there is a separation of debt policy from monetary policy, the Government will have to sell its securities to the nonbank public without Bank of Ghana monetizing such deficit. Otherwise, the PSBR will mess up Bank of Ghana's monetary policy and it will lose control over its balance sheet.

Another way for Bank of Ghana to lose control over its balance sheet is through the rediscount facility for bills sold. This is particularly so when markets are driven by the need for Government securities to meet the PSBR. When rediscount facilities are provided, the Bank of Ghana would essentially be monetizing Government debt. Bank of Ghana should make such rediscount facilities less attractive. It can encourage the primary dealers in the money market to provide discount facilities in a secondary market, as was the original objective, in order to prevent the public from dealing directly with Bank of Ghana. This way, Bank of Ghana will have sufficient control over its balance sheet.

The issue of the rediscount facility raises a fundamental problem of capital loss to household in open market operations. Without a good professional money market where there are big and informed players that understand that there are risks of capital gain and capital losses, households that lose from open market transactions will not patronize the market. The monetary authorities must promote the development of a money market with depth to sell all the securities need, both primary and secondary issues to fund government deficits. The question is what must Bank of Ghana do to promote a money market with width, depth and resilience?

Some suggestions are made. First, Bank of Ghana should encourage the primary dealers to act as wholesalers and create the nucleus of a secondary market in Government securities. The DABS and licensed dealers must be allowed to put in bids with quoted prices which as much as practicable, Bank of Ghana must not interfere with. These dealers must be encouraged to move from being a captive market who are forced to buy and hold government securities until maturity. Rates applicable to purchasers of Government securities must not be crystallized into capital loss. If the secondary market is to be developed, then the incentive must be in the interest rate structure, so that holders not to be stuck with them to maturity. As it is, the DABS are the captive market. Other interested parties should be given incentives to purchase Government securities. Once the Bank of Ghana has undertaken to sell the securities by tender, it will be necessary to decide on the following:

- How much information does Bank of Ghana provide to bidders;
- What are the administrative details such as settlement period;
- Who are qualified to participate in the auction;
- Is the auction the sole method of selling bonds or is there a limited tap as well;
- What is Bank of Ghana's role in the auction;
- Does Bank of Ghana have a reserve price i.e a maximum acceptable yield;
- Does the tender entail settlement at the differential yields that tenderers bid or do they settle it by the Dutch auction system of a uniform price;
- Whether non-competitive bids are accepted, i.e., bids for a limited quantity that will be allocated at, for example, the average price of the competitive bids;
- How does Bank of Ghana ensure that the tender is covered.

Appropriate answers to these issues, will generate greater transparency in the conduct of open market operation and bring some width, depth and resilience to the money market. This will go a long way to ensure that the price of the instruments will reflect the market price, and subsequently, trading in secondary securities will also reflect changing market conditions, and attract capital gains or losses.

An important factor in achieving the desired monetary impact, at least cost, is the maturities of the securities used. Short-term securities can often be sold at a lower yield than longer-term securities, and can be particularly useful, when there are large seasonal variations in money or credit which the central bank wishes to offset. For more permanent effects on reserve money however, short-term bills need to be continually rolled over, something which may cause difficulties – for example, if the time for rolling over corresponds with a shortage of liquidity in the banking system. The sale of longer term securities, on the other hand, has the advantage of sterilizing liquidity for a longer period, and also will be more useful for promoting secondary trading, because shorter-term paper is more likely than longer-term paper to be held to maturity, rather than traded. In some cases, the best approach may be to issue a range of maturities to attempt to meet more closely the needs of the market. In other cases, the market may be too small to allow more than one or two maturities

to be placed at the best rate.

Securities can be sold either through auctions or fixed price issues. The former have the significant advantage of allowing the central bank to meet sales volume targets more easily. In the auction process, the price of the securities is bid up or down until the required sales volume is achieved. In markets which are very thin however, the auction process could cause excessive interest rate variability.

The question of who the securities should be sold to is closely related to the central bank's rediscount/advances policy. As long as banks cannot obtain central bank cash readily or cheaply by borrowing against or discounting the relevant securities at the central bank, it does not matter who the securities are sold to—banks or nonbanks. The end result is the same in either case. However, if the central bank's rediscount/advances policy is such that banks can readily and cheaply obtain central bank cash on the basis of the securities they have purchased, their holdings of such securities will be very much like excess reserve deposits. Hence, if the securities are sold to banks, the liquidity impact of the sale is likely to be disappointing in this case. Instead, the securities will need to be sold outside banks while such a discount policy is in place. But there may still be a problem here if banks can readily obtain the securities from nonbank private agents on the secondary market. The solution, therefore, is to tighten rediscount/advances policy.

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