

PN-ABI-742
72736

Consulting
Assistance on
Economic Reform

CAER

**Discussion
Papers**



Directed by

Harvard Institute for International Development

Sub Contractors

Development Alternatives, Inc.

Williams College

Interamerican Management Consulting Corp.

Associates for International Resources and Development

Sponsored by

The U.S. Agency for International Development

Contract PDC-0095-Z-00-9053-00

PN-ARI 742

Consulting
Assistance on
Economic Reform

CAER Discussion Papers

The aim of the Consulting Assistance on Economic Reform (CAER) project is to help developing nations design, implement, monitor, and evaluate economic policy reforms. The contract is with a consortium led by Harvard Institute for International Development (HIID). Funded by the U.S. Agency for International Development (Contract PDC-0095-Z-00-9053-00), it gives A.I.D.'s missions and Washington offices access to economists and other social scientists with extensive practical experience who are highly regarded within their professional disciplines. Some of the CAER work generates results of interest to a broad audience. The CAER Discussion Papers series provides a convenient and consistent form in which to share these results.

Monetary Management in Sub-Saharan Africa: A Comparative Analysis

James S. Duesenberry
Malcolm F. McPherson

CAER Discussion Paper No. 7, June 1991



The views and interpretations in these papers are those of the authors and should not be attributed to the Agency for International Development, the Harvard Institute for International Development, or CAER subcontractors.

For information contact:
CAER Project Administrator
Harvard Institute for International Development
One Eliot Street
Cambridge, MA 02138, USA
Tel: (617) 495-9776 FAX: (617) 495-0527

MONETARY MANAGEMENT IN SUB-SAHARAN AFRICA
A Comparative Analysis

James S. Duesenberry*

and

Malcolm F. McPherson**

Harvard Institute for International Development
Cambridge, Massachusetts

June 1991

Final Report for Sub-Project "Monetary Management in
Sub-Saharan Africa" conducted under the USAID-funded
Project Consulting Assistance on Economic Reforms.

*Professor of Economics, Emeritus, Harvard University
**Research Associate, HIID

We are grateful to Clive Gray and Michael Roemer of
HIID for helpful comments.

TABLE OF CONTENTS

	Page
Executive Summary	4
I. Introduction	11
II. Motivation: Consequences of Directed Credit	12
A. Direct Controls - Problems of Allocation and Growth	12
B. Direct Controls - Problems for Macroeconomic Policy	15
C. The Experience in Sub-Saharan Africa	16
D. The Experience in Ghana, The Gambia, Malawi, Nigeria and Senegal	18
III. Improving Monetary Management - Indirect Controls	22
IV. Monetary Programming	24
A. Resource Transfers and Real Savings	25
B. The Monetary Program	27
C. Nominal GDP Targets	29
D. The Link Between GDP and Money	32
E. Forecasting Nominal GDP	36
V. Monetary Programming in Practice	39
a. Data, Models, and Concepts	39
b. Monetary Programming in the Countries Studied	41
VI. Issues in Reserve Management	44
A. Changes in the Money Multiplier	45
B. Management of Bank Reserves	46
a. Creating Reserves	47
b. Removing Excess Reserves	49
c. International Financial Flows	49
C. Managing Reserve Money in Practice	52
a. Monitoring Reserve Money	52
b. Implementation	54
c. Short-Term Adjustments	58
VII. Transmission Mechanism	59
A. Overview of the Transmission Mechanism	62
B. The Transmission of Policy in Practice	64
C. The Role of Competition	68

VIII. Reforming the Financial Sector	68
A. Financial Reform	69
B. Financial Rehabilitation	71
C. Improving Financial Markets	77
D. Increasing Financial Competition	83
IX. Restoring Confidence in the Financial System	86
A. Macroeconomic Stabilization	90
B. Financial Supervision	91
C. Systems of Financial Supervision	93
D. Government Interference	95
E. The Role of the Central Bank	97
F. Overview	99
X. The Transition to Indirect Controls -- Issues and Options	100
A. Central Bank Capacity and Efficient Markets	100
B. Competition, Control, and Stability	102
XI. Concluding Observations	103
Annex A: Basic Data Tables	106
Annex B: Forecasting the Relation between Money and Income	107
Bibliography	112
Endnotes	134

LIST OF TEXT TABLES

1. Periods of Macroeconomic Transition: Ghana, The Gambia, Malawi, Nigeria, and Senegal	20
2. Gross Savings and Investment to GDP 1975 to 1990, Ghana, The Gambia, Malawi, Nigeria and Senegal	21
3. Percent Standard Error of Projected GDP Nigeria, Senegal, Gambia, Malawi and Ghana	37
4. Official Reserves and Private Off-shore Deposits 1981 and 1989	87

Executive Summary

1. The research reported in this paper was stimulated by questions about the measures which would be required for the countries of Sub-Saharan Africa (SSA) to make a successful transition to a system of indirect monetary control. Our study has been based on a review of the literature, comparative experience in the developed countries and newly industrializing countries of Asia, and field work in Malawi, Ghana, Nigeria, Senegal, and The Gambia.
2. Throughout SSA, systems of direct control have created numerous difficulties with respect to allocation, growth and macroeconomic policy. The misallocation of financial resources and macro instability have been pronounced. Common problems have included disintermediation, excessive credit creation, expanding public sector deficits, rising inflation, de facto and de jure exchange depreciation, currency substitution and capital flight, rapid increases in external debt, and the failure of key financial institutions.
3. These financial difficulties have generated many proposals for the use of market-based (indirect) methods of monetary management. Such proposals usually focus on the indirect control of the volume of bank credit or other monetary aggregate by means of the central bank's ability to manipulate the sources of the monetary base.
4. It used to be widely believed that developing countries could not use indirect controls because the institutional arrangements required for their effective operation, such as competitive short-term security markets and adequate central bank staff capacity did not exist. Over recent years, however, there has been progress in developing short-term securities markets in some countries of SSA (including Nigeria, The Gambia and Ghana) and the capacities of central bank staffs have been augmented through training and technical assistance.
5. In a suitable environment, indirect controls can enhance the efficiency of the financial system. For such a system to work well four conditions are required. First, it must be possible for the central bank and the government to work out a public sector borrowing requirement (PSBR) and a monetary program consistent with realistic objectives for inflation, interest rates, the exchange rate, and the growth of aggregate demand. Second, the central bank has to be able to control the monetary base. For this, it requires an information system which provides timely data on bank reserves and money market conditions and staff with the skill to implement the central bank's reserve management objectives through day-to-day operations in the money market. The central bank also has to have appropriate legal and regulatory powers and the ability to enforce its directives. Third, there has to be an effective and

well-understood mechanism by which changes in monetary policy are transmitted to the real economy. Active competition among operators in the financial markets tends to produce the most efficient channels. To ensure that the promotion of competition does not subject the financial system to unwarranted systemic risks, financial supervision must create the conditions in which the prospects of major financial failures are minimized. Fourth, the central bank and the government (and potentially, the donor community) have to make a special effort to regenerate confidence in the financial system. The prevalence of parallel markets, financial disintermediation, low debtor morality, and persistent inflation are symptomatic of a general loss of confidence in the stability of local financial markets and value of local financial instruments. An essential point is that the authorities recognize that public confidence cannot be restored by more interference in the financial system.

6. Monetary programming is central to any effort to improve monetary management. A monetary program is needed to relate the central bank's day-by-day decisions to its medium-term macroeconomic objectives. The task of developing the program requires cooperation between the central bank and finance ministry to determine the potential impacts of different combinations of fiscal and monetary policies. The existence of the program has the added advantage of tending to limit the scope for ad hoc responses by the monetary authorities to changing economic circumstances.

7. Four steps are involved in formulating a monetary program. First, it is necessary to choose a target path for nominal income which is expected to produce an acceptable real output growth and inflation rate without inducing unacceptable pressure on the exchange rate. Second, a financial plan to achieve the nominal income path is required. The plan will include a program for the growth of bank credit and money supply as well as the government's fiscal proposals and arrangements for financing the operations and investments of the state-owned enterprises. Third, the circumstances which would lead to deviations from the program or require its reformulation should be specified. Agreement among the fiscal and monetary authorities in this regard helps to ensure that the program will be adhered to if the forecasts of the major aggregates remain broadly on track. Fourth, an implementation plan must be developed. In particular the central bank must estimate the change in the monetary base consistent with the financial program and develop operational procedures for injecting or withdrawing reserves.

8. None of the countries we studied had programming exercises which embrace these details. All of them, however, have some version of monetary programming which figures more or less prominently in either the government's attempts at macroeconomic control or the money and credit performance criteria set by the donors.

9. Nigeria is now committed to a structural adjustment program intended to stabilize the exchange rate and bring inflation under control. The use of exceptional financing is being limited, current exchange transactions are being deregulated, and the exchange rates (official and parallel) are being unified. To do those things while slowing inflation requires that the target for nominal domestic absorption has to be consistent with the country's capacity to import at the existing exchange rate.

10. In Ghana the monetary programming exercise depends on the cooperation of several agencies. The statistical service prepares GDP and price forecasts. The central bank estimates the demand for money and the balance of payments (in conjunction with customs, statistics and the ministry of finance). The ministry of finance estimates the credit required by the government. Though some parts of the analysis are relatively sophisticated, a major gap exists in the estimate of imports and inflation. Imports are derived residually from other balance of payments data and then assessed for their "reasonableness." The difficulty is that the change in net foreign assets, which is typically a target in the programming exercise, is used in deriving imports. The estimate of inflation is negotiated between the central bank and the ministry of finance.

11. In Malawi, the IMF exercise to determine limits on credit creation provides the basic framework for monetary programming. Recent efforts among the central bank's staff have focussed on developing a set of procedures for monitoring and ultimately controlling the monetary base.

12. Monetary programming in Senegal requires the interaction between the staffs of the BCEAO and national Agence. The staff of the latter, in turn, must work with the finance and planning ministries. The BCEAO bases its national income analysis on an analytical framework in which the output of important sectors of the economy -- mainly primary products and some other tradeable goods -- is supply-determined. The output of the nontradeable sectors is presumed to be driven by demand including the demand derived from the incomes of producers in the tradeable sectors. The BCEAO makes a detailed forecast of the output of the tradeable sectors. That forecast is based on judgements which reflect a detailed analysis of the factors currently affecting production in each subsector. Historical data including some econometric estimates are used to link the results of the first exercise to the prediction of output in the remaining sectors. A separate analysis of the outlook for prices reflects the information assembled for the GDP forecast. The parallel exercise produced by the Agence is then compared with the BCEAO results. After some effort to reconcile the two forecasts a compromise is worked out which provides the basis for decisions regarding money supply targets and credit ceilings.

13. Until recently, The Gambia had no independent capacity to develop a monetary program. The Gambian authorities typically based their policy decisions on the targets and projections derived by the IMF.
14. Once a central bank has chosen a path for the growth of money supply and developed a consistent monetary program, it has to control the growth of reserve money. In developing countries, however, there are always serious lags in the collection and processing of information on macro variables. For that reason the central banks will often be "flying blind" as they attempt to manage reserves. They will have to base their estimates of the current situation on a combination of timely but partial information, accurate but out-of-date information, and signals provided by movements in variables such as interest rates and exchange rates.
15. While central banks in developed countries often seek to achieve precise control over a particular monetary aggregate or the short-term interest rate, more modest objectives are warranted in the countries we have studied. The emerging interbank and short-term securities markets are thin and potentially volatile. The central bank has to conduct its own actions in ways which do not add to that volatility. That will require small but relatively frequent reserve manipulations. At the same time the central bank has to resist changing its reserve operations in response to day-by-day changes in interest rates and other indicators of credit market conditions. To satisfy these conflicting requirements, it is useful for the central bank to formulate a reserve management plan covering a short period such as a month. This plan would be constantly reviewed and up-dated.
16. Typically, the transmission mechanism is not well understood in developing countries. Moreover, due the financial disruptions of the last decade in SSA, the transmission mechanism has been changing as parallel markets and alternative financial channels have emerged to allow holders of financial assets to defend themselves against inflation, negative real interest rates, and rapid exchange rate depreciation. The recent efforts by central banks to improve their systems of monetary management will further modify the transmission mechanism. These factors will have to be taken into account and factored into the monetary program and reserve management plan.
17. Achieving the objectives of the monetary program depends on the existence of viable financial institutions and their ability to compete in the markets through which the changes in monetary aggregates are being transmitted. Because of the financial difficulties associated with both market and non-market failures, considerable effort has been devoted to financial rehabilitation in SSA. Financial rehabilitation is designed to restructure the organizations so that they have higher levels of capital, qualified

staff who actively monitor their own operations, and a system of risk accounting which is subject to regular outside supervision.

18. To ensure that the system of monetary management can in fact be improved the government and the central bank in each country will have to make a special effort to rebuild public confidence in the financial system. Two aspects require special attention. The first is confidence in the value of locally-denominated financial assets. The second is confidence in the ability of the monetary authorities to assure the solvency and liquidity of the financial system. The importance of confidence should not be underestimated. High and rising inflation, exchange rate depreciation, negative real interest rates, doubts about the solvency of major financial institutions, and the poor quality, high cost, and limited range of financial services have combined to erode public confidence in both the financial instruments and the financial institutions in the countries we have studied. Indeed, local financial operators widely view the central bank itself with skepticism and distrust. The monetary policies of the last two decades have left deep scars and few among the public believe that the respective central banks have the ability to effectively manage the financial system.

19. Improved bank supervision will make an important contribution to re-establishing confidence. In general, bank supervision has been largely ineffective in most countries of SSA. Central banks generally lack competent supervisors and bank inspections have been irregular and incomplete. Furthermore, even when problems are correctly identified governments have often intervened to prevent remedial action especially when state-owned banks have been involved. Improving supervision will be time-consuming and difficult. Several areas need attention to ensure the safety and soundness of financial institutions and that the relevant information is assembled and analyzed. First, the financial regulations and laws that already exist have to be enforced. Second, the staff required to undertake regular inspections and audits of financial institutions have to be better trained. Third, government interference in the operations of financial enterprises in which it has an interest has to cease. And fourth, the central bank has to develop a strategy for the appropriate use of its support. Central bank lending has to be rationalized and, in most cases, sharply reduced.

20. The above program -- the development of monetary programming and a reserve management plan, understanding the transmission mechanism, financial rehabilitation, and improving confidence in the financial system -- provides an framework for promoting broad-based improvements in monetary management. Its success, however, will depend on two types of changes. First, measures will be needed to increase the capacity of the central bank and to improve the efficiency of financial markets. These changes should occur irrespective of whether monetary management is direct or indirect.

Second, a strategy for moving towards a more market-oriented approach to monetary control has to be developed.

21. Improving the central bank's management of the financial involves a series of actions. First, data have to be timely and accurate. Second, the data have to be analyzed in a meaningful way. Third, a system for implementing and monitoring the monetary program has to be established. Close cooperation between the central bank and the ministry of finance will be essential. Fourth, procedures for ensuring that all financial institutions comply with the relevant regulations will be required. Fifth, attention has to be paid to the state of the formal, parallel (or alternative) and off-shore financial markets. And sixth, special efforts should be made to rationalize the internal operations of the central bank itself. These steps will be supplemented by attention to three areas of institutional development and performance -- competition, reserve control, and macroeconomic stability.

22. As improvements in monetary management begin to take hold, the decision whether to move to a fully-fledged system of indirect monetary control can be confronted. The successful operation of an indirect control system requires the completion of a number of financial reforms, the training of staff, and cooperation between the central bank and the ministry of finance (and other economic ministries if applicable). Those conditions, however, are contingent on commitments by the government to:

- the fiscal responsibility and disciplined control of money and credit required for macroeconomic stability;
- a market-oriented financial system;
- a working relationship between the central bank and the government which gives the central bank a day-to-day operational role in macroeconomic decision-making free of political interference.

23. Even with these commitments, however, there has to be concomitant changes in the operation of financial institutions and financial markets. These include:

- restructuring the insolvent and illiquid banks;
- effective enforcement of reserve requirements;
- curtailment of special credit allocation programs and the elimination of open-ended refinancing from the central bank;
- elimination of interest rate ceilings;
- effective financial supervision;
- development of competitive markets for short-term securities;
- removal of barriers to entry and other

- restrictions on bank competition;
- a realistic exchange rate;
- data management systems to support effective monetary control;
- recruitment and training of enough staff to deal with the requirements of an indirect control system.

24. The central banks of the countries we have studied have all taken action to improve their financial systems. However, it will be some time before the full benefits of indirect monetary management will materialize. For some countries indirect monetary control will not be advisable without further improvement in their financial markets. Fortunately, most of the changes required for indirect control are desirable even with a ceiling system.

I. Introduction

To overcome the inefficiencies and financial instability of the last two decades, many countries in Sub-Saharan Africa (SSA) are moving from systems of direct monetary management and credit allocation to systems which rely on market processes. The transition involves three separate components.

First, many banks and other financial institutions, particularly those which are state-owned, are insolvent. Their failure has resulted from the interaction of external factors, errors of macroeconomic policy, political interference, weak management, and fraud. With government and donor assistance, the insolvent institutions are being liquidated or rehabilitated. Efforts are also being made improve the capacities of the central bank staff and to strengthen financial supervision.

Second, banking operations are being deregulated and liberalized. Credit allocation arrangements and financial subsidies are being phased out and regulations which set limits on loan and deposit rates are being eliminated.

Third, the monetary authorities in a number of countries are taking steps toward the use of markets to control the aggregate volume of money and credit.

Improving the system of monetary management is not an end in itself. Rather, for a variety reasons related to internal and external factors, the system of directed credit has created serious financial distortions. The aim in removing these distortions by moving towards a market-oriented system of monetary management is to encourage financial development with the objective of raising the overall rate of economic growth throughout SSA.

The research reported in this paper was stimulated by questions about the measures which would be required for the countries of SSA to make a successful transition to a system of indirect monetary control. The study has been undertaken in three stages. Stage one involved a review of the literature and relevant comparative experience to identify the major issues involved (Duesenberry and McPherson 1991). Stage two involved field work in Malawi, Ghana, Nigeria, Senegal, and The Gambia. The results are reported in Bolnick (1990), Younger (1990), Biggs, Srivastava, and Wakeman-Linn (1991), Nelson (1991), and McPherson and Duesenberry (1991). Stage three, represented by this paper, is a comparative review of the findings.

Our objective in writing this report has been to draw on theory, case studies, and numerical data in a way that will make the

discussion useful to monetary authorities in Sub-Saharan Africa who are grappling with the problems of improving their systems of monetary management. The staffs of donor organizations who are assisting in this process may find the analysis useful as well. It has not been our intention, nor was it our brief, to advocate that countries move towards indirect, market-based systems of monetary control. The particular circumstances in each country will determine the appropriate mix of direct and indirect mechanisms for monetary management. We do advocate, however, that the distortions and inefficiencies that impede financial development and reduce a country's growth potential should be removed.

The paper is arranged as follows. Section II reviews the consequences of systems of directed credit and discusses some of the difficulties experienced in SSA and the five countries in this study. Section III briefly outlines the main features of an indirect system of monetary management. Key issues are monetary programming and reserve management; the transmission mechanism; the importance of a viable, competitive financial system; and the need to re-establish confidence in financial institutions and financial instruments. Sections IV and V deal with the theoretical and practical issues associated with monetary programming. Section VI discusses reserve management. Section VII highlights the changes in the transmission mechanism likely to accompany the introduction of indirect monetary management. Sections VIII and IX, respectively, address the problems of financial rehabilitation and rebuilding confidence.

Section X reviews some issues and options facing countries whose authorities are in the process of moving towards a system of indirect monetary management. Section XI contains concluding observations. Annex A provides basic macroeconomic and monetary data on the countries in the study. Annex B contains estimates of the relation between money and income to supplement the discussion on monetary programming and reserve management.

II. Motivation: Consequences of Directed Credit

Systems of direct control have created numerous difficulties with respect to allocation and growth and macroeconomic policy throughout SSA and particularly in the five countries we have studied. The first two sub-sections review these difficulties in general terms; the last two focus on them in the African setting.

A. Direct Controls - Problems of Allocation and Growth

Until recently the governments of most developing countries attempted to maintain tight control over their financial systems. This approach was motivated by several considerations (Herrick and Kindleberger 1983:Ch.15; Gillis et al. 1988:Ch.5; World Bank 1989:55-61). Many countries adopted detailed plans as a means of

promoting development; control of financial resources was regarded as essential to the implementation of the plan (Lange 1961; Green 1974; Taylor 1975; Bettelheim 1979:Ch.7). Certain investment projects were thought to produce social or economic externalities which were not captured in their commercial returns. The capital costs of those projects were often subsidized by central banks using the interest-free loans provided by currency-holders (Jucker-Fleetwood 1964).

In other cases governments deemed it appropriate to intervene to offset market failures (Goldsmith 1967; Westphal 1975; Ligeti 1985). A further consideration was the widespread view, derived largely from the experience of the Great Depression, that central banks had to regulate the financial system as a means of minimizing systemic risks. Those positive considerations were reinforced by a distrust of market processes (Johnson 1967). That distrust had ideological origins but was often strengthened by the belief that financial markets are subject to destabilizing speculation (Arida and Taylor 1989:863-865) or that, if the markets were unregulated, social inequality would be reinforced.

The operation of direct control regimes has caused many difficulties. Some were inherent in the nature of the controls themselves; others resulted from the interaction of the controls, external conditions, and other government policies, such as those related to trade, the exchange rate, and the fiscal deficit (McKinnon 1973: Chs.2,3; Shaw 1973; Drake 1980; Fry 1988:Ch.12; World Bank 1989:Ch.5; Le Fort 1989). The effects of the controls were frequently undermined by financial innovation and the development of parallel markets (Nowak 1984; Mathieson 1988; Montiel 1990). The authorities faced the choice of introducing more controls or seeking alternative approaches to monetary management. The general tendency among developed countries and the newly industrializing countries of Asia has been to abandon direct controls (Arndt 1983; Cole and Patrick 1984; Fry 1988:Ch.14; Villanueva 1988; Cole and Yaser 1989; Cho and Khatkhate 1989; Meek 1989). Countries in SSA have been slower to pursue this approach.

The countries using direct control systems have usually followed low interest rate policies. Nominal rates of interest for both deposits and loans have been kept at low levels and real interest rates have often been negative. Real interest rates (i.e. nominal interest rates adjusted for inflation) have been especially low for loans which are refinanced by the central bank.

Numerous studies over the last few years have shown that those policies have reduced saving and distorted the allocation of capital (Adams and Graham 1981; Fry 1988). Compliance and regulation costs have increased, financial competition and intermediation have been reduced, and financial innovation has been stifled (Hoskins 1989). The policies have made rationing of credit inevitable and fostered corruption in the administration of credit

programs (Fry 1979; Gonzalez-Vega 1981; Long 1983; Adams, Graham and Von Pischke 1984; World Bank 1989:169-172).

Savers faced with low interest rates on deposits have invested in real assets including gold and jewelry. Those who could do so transferred their resources abroad. Others have purchased consumer durables or simply not saved. Attempts by asset-holders to insulate themselves from inflation have often caused sharp increases in the prices of real estate and stimulated higher consumption by those who have benefitted from the capital gains. To defend themselves from losses associated with interest rate ceilings, financial institutions sought ways to lower their administrative costs and lower their risks (Gonzalez-Vega 1981a). Their portfolios have become concentrated (with a smaller number of large loans) and the non-interest costs to borrowers have increased (through agreements on compensating balances, additional collateral, and longer delays in processing loans). The primary drawback of interest rate controls, however, is the presumption that capital is not scarce. As an economic resource, it is not rewarded appropriately or used efficiently (Johnson 1967; Adams 1977).

There has been, of course, considerable variation in the experience among countries. Inflation has posed much more difficult problems in some countries than in others (Greene 1989). The technical quality of bank administration and the severity of corruption have also varied widely (Dale 1982; Snoek 1989).

In some countries the "repression" of the formal financial system expanded the activity in a variety of informal markets (Drake 1980:Ch.6; Acharya and Madhur 1983). These markets operate on at least a small scale in almost all countries (Lee and Han 1990) and because of transactions and information costs they will continue to provide valuable services to borrowers who cannot gain access to formal sector institutions. In cases where the informal market activities have been stimulated by low deposit rates and credit rationing in the formal financial sector, informal markets have frequently helped to mitigate the adverse effects of direct credit controls. Nonetheless, these channels are a second-best alternative to the operation of unfettered formal sector markets.

Korea, perhaps because of the size and high visibility of its informal markets, led the way in the rationalization of interest rates. Nominal interest rates were raised and the banking system attracted a large volume of funds which appeared to have been shifted from the informal market (McKinnon 1973; Cole and Park 1983:esp. Ch.5; Mahler 1990; Kang and Choi 1990).

The success of Korea's reform effort attracted widespread attention. Its influence was reinforced by the wave of financial deregulation in the developed countries which began in the late 1970s¹. The impetus for the latter movement bore little

resemblance to the problems of financial systems in developing countries. But in both cases, the clash between market forces and excessive regulation produced distortions and anomalies which have made the continuation of direct controls untenable.

While it is easy to point to specific examples of resource misallocation, lower rates of financial savings, and opportunities for corruption when financial systems have been subject to detailed credit allocation and controlled interest rates, the evidence on the overall effect of financial repression on economic growth is not clear-cut (Fry 1988:Ch. 6; Dornbusch and Reynoso 1989; World Bank 1989:127-128; Cole and Wellons 1989; Cho and Khatkhate 1989). On balance, however, it appears that financial liberalization and the movement towards competitive credit markets favors economic growth (Dooley and Mathieson 1987; Paulson 1988; Johnston and Brekk 1989).

The process of financial liberalization is associated with increased real rates of interest in formal financial markets (McKinnon 1986; Gillis et al. 1987:345-353; Leite and Sundararajan 1990). Economic growth is stimulated in two ways. Higher real rates on deposits increase the flow of savings through financial institutions and though the effect is often attenuated, to higher levels of savings (Chandavarkar 1978; Bhatt 1986). On the demand side, high real interest rates encourage the more efficient use of capital which leads to larger increases in output per unit of capital invested.

Nonetheless, the positive contribution of financial liberalization to growth in the short and medium terms is marginal and cannot readily be disentangled from the effects of other economic reforms. What is clear, however, is that the continuation of distorted financial policies has serious negative effects on the growth prospects of an economy (Fry 1988; Paulson 1989; World Bank 1989:Ch.5).

B. Direct Controls - Problems for Macroeconomic Policy

When monetary management is based on the direct control of credit, macroeconomic policy and credit allocation are part of the same process (Bain 1971; Maisel 1973; Shaw 1973:9-15; Furness 1974:233-243; Gillis et al. 1987:324-325; Goodhart 1989:Ch. VI). The aggregate credit supplied may be derived as the sum of the separate allocations among banks or it may be a fixed total which is then subdivided among sectors with each bank's share determined according to its willingness to lend to designated sectors and/or activities. In either case, macroeconomic policy is conducted through variations in the credit ceilings².

In principle and under favorable circumstances in practice, it is possible to achieve adequate macroeconomic control and most of the benefits of a market allocation of credit by using an aggregate

credit ceiling³. The successful application of that approach would require the elimination of interest rate ceilings on deposits and loans or an interest rate policy consistent with market clearing (Dooley and Mathieson 1987; Leite and Sundararajan 1990). An alternative approach to macroeconomic control would be to distribute the credit ceilings among the banks according to their recent share of deposits. It would encourage the banks to compete for deposits through the offer of higher interest rates.

While this approach would be a major improvement on those which have been used in most countries of SSA, it has serious limitations. A system in which credit allocation is based on market shares is vulnerable to collusion or to a noncompetitive live-and-let-live strategy. A ceiling system would not encourage the development of a short-term money market in which bank competition for reserves determines the cost of funds for all lenders. The process of distributing ceilings among banks often creates political and administrative problems for the central bank. There would also be appeals from banks for exceptions to accommodate loans which may be justified on the grounds of national interest. Moreover, unless the volume of credit allocated according to government priorities is drastically reduced, open competition for funds among the banks could, in many cases, lead to unacceptably high and potentially unstable interest rates. A further limitation is that ceiling systems are inflexible. They cannot readily be adapted to the entry of new financial institutions or the development of new kinds of financial instruments. Finally, the existence of a ceiling system can encourage a government to reinstitute direct credit allocation when that seems expedient (Khathkate 1977)⁴.

Those considerations have induced a growing number of governments and monetary authorities in Asia to begin replacing their credit ceiling systems with indirect techniques of monetary control based on reserve management (Sundararajan and Molho 1988; Cho and Khatkhate 1989).

C. The Experience in Sub-Saharan Africa

Countries in SSA have encountered many of the difficulties noted above (Paulson 1988; Greene 1989; Plane 1989; World Bank 1989a:Ch.1). With the advice and encouragement of the IMF, World Bank, and bilateral donors, they have been liberalizing their financial systems (Honohan 1988; Berlin 1988; Niepoort, Hicks and Swinburne 1989; World Bank 1989a:169-173). The role of credit allocation programs has been reduced and interest rate subsidies have diminished. Ceilings on interest rates for deposits and loans have been abandoned in many cases. A large number of countries now use an overall credit ceiling which is then divided among individual banks. The banks make their own lending decisions although allocational constraints are frequently still imposed. The aggregate ceiling is often determined in negotiations with the

IMF.

While the credit ceiling system does not in itself direct credit to particular firms or sectors, a number of governments have used their ownership of and/or influence over banks to allocate a large part of the available credit to "priority" sectors. Government control of specialized banks for agriculture or development has been widespread and some governments own or control commercial banks as well. The specialized banks have been funded by international aid agencies, from the development budget, or by the central bank.

In recent years many state-owned banks in SSA have become insolvent. The difficulties encountered have been associated with adverse external circumstances, miscalculations in the conduct of domestic economic policy, mismanagement, corruption, inadequate central bank supervision, and a breakdown in debtor morality. A large proportion of the nonperforming loans on the books of insolvent banks has also resulted from the allocation of credit to unprofitable state-owned enterprises, marketing boards, and rural credit organizations. Many of these banks are now being liquidated or restructured.

Although the difficulties have existed for many years, governments are frequently reluctant to undertake financial reform. There are many reasons. Financial intervention often generates a dynamic which subsequently retards reform. For instance, controls can inadvertently cascade. Or, having begun a particular program designed to "promote development" governments may not want to be seen as reversing themselves even when it becomes obvious that the program is not working as intended. Some credit programs, such as those to promote "indigenization" were a direct reaction to the perceived inequities of colonial policies. Finally, some programs (such as credit guarantees) reflect class interests.

Other commentators, e.g. Kane (1981) and Hyden (1983), have focussed on opportunistic behavior when individuals and officials use the state apparatus for private gain. This theme is prominent in the political economy literature (Bates 1981; Nelson 1989; Alt and Shepsle 1990) which highlights the political use of economic rents generated by the financial controls. According to this view, financial intervention persists (and is often reinforced) because it yields politically acceptable outcomes (Shaw 1973; Adams and Graham 1981; World Bank 1989:55-61). The recipients of "cheap" credit appreciate the income transfer, and governments find that the notions of providing credit to "help the poor" and "promote development" are politically popular. A final attraction of credit ceilings is that they are easy for the central bank to administer.

Yet, even if credit is being allocated relatively free of political influence, it is often presumed, as Soles (1978) put it, that credit is an "organizing force." The presumption, however,

fails to recognize that the demand for credit is a derived demand. It is derived from opportunities to engage in productive investment and not vice-versa. Allocating credit does nothing to create these opportunities (Brimmer 1974).

To deal with the difficulties generated by government interference in the credit allocation process, the financial reform programs of many countries in SSA now include the privatization of the financial institutions. As a means of reinforcing this process, it is widely agreed that central banks should cease allocating credit and confine their activities to the prudential regulation of the financial system and the broad direction of macroeconomic policy.

One factor which complicates efforts to improve monetary management and the conduct of macroeconomic policy has been the loss of public confidence in the local banking system and in the value and convertability of local currency. Years of inflation, periodic devaluations, and exchange controls have led many investors to hold their financial assets abroad or to shift into foreign currency. Interest rate ceilings and credit rationing, often subject to political direction, have caused investors and borrowers to transact their business outside the established banking channels. In many countries a large but unmeasured volume of transactions is made in foreign currency or by the transfer of balances held abroad. The monetary authorities frequently have little knowledge of the extent of these activities. That they have no control over them severely limits the scope and effectiveness of domestic monetary policy.

Thus, the monetary authorities face the task of introducing measures designed to improve monetary management within a setting characterized by deep-seated distrust and progressive institutional deterioration. With the assistance of the donor community, some countries have taken specific measures to convince holders of locally denominated financial assets that they need not fear sudden large devaluations or financial expropriation, and that exchange controls will be eliminated or operated in reasonable and predictable ways. Meanwhile, attempts are being made to assure lenders that they can get higher returns and more convenient service with lower risks from domestic financial institutions than by using foreign exchange for their local transactions.

D. The Experience in Ghana, The Gambia, Malawi, Nigeria and Senegal

The general pattern of events outlined above has been evident in Ghana, The Gambia, Malawi, Nigeria and Senegal. Direct controls and credit allocation have created many pressures which are readily evident in the data on real income, inflation, the balance of payments, and the monetary aggregates. Details are provided in Annex A. Considered over a relatively long period, the macroeconomic performance of all of the economies has been poor.

Real income growth has been sluggish, particularly when population growth of more than 3 percent per annum is taken into account. Inflation has been high, money and credit have grown rapidly, and the foreign sector accounts have deteriorated. The growth of external debt in all five countries has been rapid, well above the rates of increase of either GDP or exports.

The data also show that there was a particular period in each country's recent history, which for comparison purposes we have taken to be three years, during which the economy began to unravel. The period involved major internal or external shocks. For Malawi, it was 1979-81 when the second oil shock significantly worsened the external terms of trade and a drought cut agricultural production sharply reducing exports and local income. In The Gambia, the period 1976-78 produced a distinct change in the pattern of growth as government activity increased dramatically and the Sahelian drought led to crop failure. The drought also had a major impact in Senegal during the period 1977-79. Its effects on inflation and external debt were accentuated by the rapid increase in urban incomes and imports supported by the expansion of government consumption.

The turning point for Ghana was the period 1975-77. GDP and agricultural output declined sharply and credit and prices began to grow explosively⁵. Finally, a major shift in the economic performance of Nigeria occurred in the three years 1980-82 when international oil prices fell and agricultural output contracted.

In all of these cases the external shock (such as the change in petroleum prices or drought) exacerbated an already difficult internal situation (a collapse of income and rapid expansion of government expenditure). This is consistent with the general finding in the structural adjustment literature that external factors have tended to accentuate the difficulties created by internal policy-generated distortions (Killick 1991; Roemer and Radelet 1991).

Data in Tables 1 and 2 place the above points in perspective. A notable pattern in Table 1 is that the growth rates of money and credit have greatly exceeded the growth of real output. Periods of rapid inflation, exchange depreciation, and the accelerated accumulation of external debt have been common. All of these situations have been dynamically unsustainable. To illustrate, the ratio of external debt to GNP in The Gambia in 1971 was .1; by 1983, it was 1.35. Corresponding data for Nigeria, for 1975 and 1987, respectively, were .03 and 1.29. Similar experiences are evident in the other countries.

Table 2 clearly shows why the balance of payments and external debt problems of all of these countries have been so acute. In Senegal, the resource balance, i.e. gross domestic investment minus gross domestic savings, has been negative by a wide margin since 1975.

Except for one year, the same applied in The Gambia (1975) and Malawi (1984). In Ghana, the resource balance was roughly zero until 1982, after which the situation deteriorated markedly. Finally, from these data, Nigeria has been a net lender to the rest of the world about as often as it has been a net borrower⁶.

Table 1: Periods of Macroeconomic Transition, Ghana, The Gambia, Malawi, Nigeria, Senegal

(Annual Percentage changes)							
	Real GNP	Money Supply	Domes. Credit	Dom. Prices	Extern. Debt	GDP in Agric.	Exch. Rate
Ghana							
1970-74	2.6	18.7	15.8	12.9	5.5	3.0	-2.4
1975-77	-0.5	29.6	33.6	28.6	13.1	-2.2	0.
1978-82	-2.0	37.3	23.9	35.6	1.9	-0.5	-9.3
The Gambia							
1971-75	6.6	19.8	33.1	8.2	19.5	4.7	-0.4
1976-78	-1.0	8.6	17.2	10.0	46.7	-4.4	4.6
1979-83	0.6	14.3	18.4	6.0	21.1	4.8	-10.4
Malawi							
1974-78	3.3	7.3	26.1	6.2	20.6	5.3	0.
1979-81	-2.9	12.2	12.9	11.6	7.1	-4.5	-3.1
1982-86	3.2	12.8	10.5	9.2	6.2	2.3	-11.9
Nigeria							
1975-79	3.3	18.7	49.4	11.7	35.7	-1.3	0.7
1980-82	-1.1	5.0	25.7	9.6	11.4	-4.4	-5.6
1983-87	-0.4	8.7	7.8	10.5	10.3	1.6	-12.4
Senegal							
1972-76	3.0	21.6	23.8	7.9	20.1	4.4	1.0
1977-79	0.9	7.1	15.3	5.3	22.6	-0.9	4.2
1980-84	1.7	10.1	10.8	7.3	9.5	0.2	-8.7

Sources: World Tables 1989-90 Edition (World Bank 1990)

IFS Yearbook 1990 (IMF 1991)

Note: GNP measured in constant 1980 prices; money and credit in current prices; domestic prices are taken to be the GDP deflator; external debt is measured in US \$; the exchange rate is the local currency relative to the \$.

Table 2: Gross Savings and Investment 1975 to 1990, Ghana, The Gambia, Malawi, Nigeria and Senegal

	(Percent of GDP)									
	Ghana		Gambia		Malawi		Nigeria		Senegal	
	S	I	S	I	S	I	S	I	S	I
1975	13	13	21	12	17	34	22	22	13	18
1976	9	9	-2	11	18	26	27	27	9	17
1977	10	11	8	14	20	25	26	27	11	18
1978	4	6	-14	31	21	39	21	25	5	17
1979	7	6	13	26	11	31	25	20	4	15
1980	5	6	3	25	11	25	30	21	-1	15
1981	4	5	-5	20	12	18	18	21	-5	16
1982	4	3	-0	17	15	22	9	15	5	16
1983	1	4	-4	18	15	23	8	11	2	16
1984	7	7	-5	20	15	13	8	6	6	16
1985	8	10	9	20	14	19	11	8	2	14
1986	6	10	6	26	9	11	8	10	7	15
1987	8	11	8	22	10	13	18	12	8	15
1988	6	12	7	18	8	16	15	13	9	15

Source: World Tables (1989-90 Edition) World Bank (1990)

The rapid growth of credit evident in Table 1 suggests that all of the central banks had considerable difficulty exercising control over credit, despite the existence of credit ceilings. Indeed, the data show that the supply of domestic credit grew rapidly even when real income declined.

A key problem has been that, with the exception of Senegal, none of the central banks have had formal limits on what they can lend to their respective governments. The Central Bank of The Gambia Act passed in 1971 had a provision (taken over from the Gambia Currency Board) which limited the volume of central bank lending to government. When that limit began to constrain government borrowing, the legislation was changed. When the new limit became restrictive again, it was ignored. A formal ceiling on central bank credit to the government in Nigeria was imposed in 1965/66 (CBN 1979:108). This was the first and last time such a limit has been applied. In Senegal, the government has observed its borrowing limit at the BCEAO. However, this limit has been ineffective as government-owned enterprises borrowed from the government-owned banks which, in turn, borrowed from the BCEAO and abroad (Nelson 1991)⁷.

Whether the growth of money and credit in the context of slow (and sometimes negative) real output growth and sluggish adjustment in exchange rates and interest rates "caused" the problems of debt and

inflation is problematic. Until very recently, it was common for government officials in Sub-Saharan Africa to argue that the external shocks "caused" the problems and the monetary distortions were the result of governments attempting to adjust to these shocks (OAU 1980; United Nations 1986, 1989). Whatever the cause however, the rapid rates of inflation, indifferent growth performances, expanding external debt, and the accelerated depreciation of the exchange rate have constrained the policy options available to each government. Indeed, for the past several years, the only options have been to adjust or continue regressing.

The response by each country has differed. Ghana introduced a comprehensive economic reform program in 1983. The Gambia did likewise in 1985. Senegal has operated under an IMF program since 1981/82. Nigeria went through a protracted period of inaction and internal debate about whether it would implement an IMF program. Such a program was rejected but in 1986 a Structural Adjustment Program which has many of the measures urged by the IMF was formulated and implemented. Malawi has been undergoing structural adjustment under IMF and World Bank auspices since 1979.

Whatever the inspiration for their adjustment efforts however, the economic retrogression experienced by all five countries eventually convinced senior policy makers that their macroeconomic policies were unsustainable. The policy responses have been comprehensive. Financial reform has been a prominent feature of all of them.

III. Improving Monetary Management - Indirect Controls

The financial difficulties highlighted above have generated many proposals for the use of market-based (indirect) methods of monetary management. Such proposals usually focus on the indirect control of the volume of bank credit or of some other monetary aggregate by means of the central bank's ability to manipulate the sources of the monetary base.

In many developed countries and, as noted above, in some Asian developing countries, central banks operate through financial markets to achieve their credit and money growth objectives (Meek 1985; World Bank 1989:51-53; Goodhart 1989:Ch. VI; Mayer, Duesenberry and Aliber 1990:Ch.12). By changing the amounts of particular assets and liabilities on their balance sheets, central banks are able to control the monetary base or the volume of bank reserves⁸.

It used to be widely believed that developing countries could not use indirect controls because the institutional arrangements required for their effective operation, such as competitive short-term security markets and adequate central bank staff capacity did not exist (Park 1973; Furness 1974:238-243; Falegan 1978; Ouattara 1978). But, over recent years there has been progress in

developing short-term securities markets in some countries of SSA (including Nigeria, The Gambia and Ghana) and the capacities of central bank staffs have been augmented through training and technical assistance. Furthermore, Asian countries such as Malaysia and Indonesia have shown that a professionally-oriented central bank can provide the appropriate conditions for these markets to develop (Sundararajan and Mohlo 1988; Cole and Yaser 1989; Meek 1989).

In general, an indirect system of monetary management avoids the problems of the ceiling systems discussed above. In a suitable environment, indirect controls can significantly enhance the efficiency of the financial system. But for such a system to work well a number of conditions are required. The conditions fall into four groups.

First, it must be possible for the central bank and the government to work out a public sector borrowing requirement (PSBR) and a monetary program consistent with realistic objectives for inflation, interest rates, the exchange rate, and the growth of aggregate demand. The central bank staff must be able to work effectively with the finance ministry and international agencies in designing such a program.

Second, the central bank has to be able to control the monetary base. The crucial issue is to determine what elements of the money base can be controlled and what can be offset (Park 1973; FRB Chicago 1982). The central bank has to have the appropriate legal and regulatory powers and the ability to enforce its directives. At the same time some competition should exist in the interbank market as well as the market for short-term securities. The central bank has to have an information system which provides timely data on bank reserves and money market conditions. Its staff also need the skills to implement the central bank's reserve management objectives through day-to-day operations in the money market.

Third, there has to be an effective and well understood mechanism by which changes in monetary policy are transmitted to the real economy. Active competition among operators in the financial markets tends to produce the most efficient channels. A key aspect of this process will be the liberalization of interest rates so that the market processes can reflect the true scarcity of capital in each country (Bhatt 1974)⁹. If adopted, this would be a profound change in all of the countries we have studied (and other countries in SSA as well). Specifically, it would mean that the governments will have abandoned their deep-rooted and long-standing pretense that the central bank can make capital relatively abundant simply through the creation of credit¹⁰.

To ensure that the promotion of competition does not subject the financial system to unwarranted systemic risks, financial

supervision must create the conditions in which the prospects of major financial failures are minimized (Corrigan 1989; Seidman 1990). The recent experience of the developed countries shows that to avoid portfolio concentration and reduce the incidence of financial speculation and fraud, the operations of financial markets and financial institutions require close and continuous scrutiny (Kareken 1983; Eisenbas 1986; Levonian 1990).

Fourth, the central bank and the government (and potentially, the donor community) need to make a special effort to regenerate confidence in the financial system. Parallel markets, financial disintermediation, low debtor morality, and persistent inflation are all symptomatic of a general loss of confidence in the stability of local financial markets and value of local financial instruments. To defend themselves from the losses associated with financial dislocations, local individuals and firms have transferred their resources abroad, increased their holding of real assets, and/or begun conducting their local transactions in foreign currency. To reverse these activities, the government and the central bank will have to focus on creating a setting in which individuals and firms believe that the risks posed by inflation and exchange rate movements have fallen significantly and that there is no threat of expropriation if their resources are repatriated.

Restoring public confidence will often take many years. The process can be hastened in several ways. The central bank should be actively committed to the development and use of financial markets; there should be a substantial and sustained reductions in the budget deficit; and special financial arrangements for the public enterprises should be abandoned. Legalizing parallel market activity would also help. The essential point is that the authorities understand (and act as though they understand) that public confidence cannot be restored by more interference in the financial system.

These conditions -- knowledge of the PBSR and a monetary program to guide policy, market-based arrangements for modifying bank reserves, a transmission mechanism based on competitive markets supported by adequate financial supervision, and a special effort to regenerate confidence in the financial system -- are the minimum needed for the introduction of an indirect system of monetary management. We shall now examine the practical aspects of improving monetary management.

IV. Monetary Programming

Monetary programming is central to any effort to improve monetary management. The typical starting point is the specification of a nominal income growth target. This becomes the basis, via the money-income ratio or an econometric relationship, to derive an estimate of the corresponding growth in the money supply. The

limits on credit or the expansion of the monetary base are then derived.

Because the monetary programming exercise begins with nominal income, the attention of those responsible for monetary policy tends to be focussed on the economic and financial implications of the nominal income target itself. The data reported in Table 1 emerged from situations in which the respective central banks were operating credit ceilings. These were apparently ineffective. It seems worthwhile, therefore, to digress briefly to make a point about the assumptions regarding the real resources and spillover effects that are implicit in the choice of the nominal income target.

A. Resource Transfers and Real Savings

A common presumption in developing countries has been that financial capital (i.e. money and credit) can be used to create real capital. Meier (1989:178) put the matter in perspective when he noted:

Although the existence of a more developed capital market and financial intermediaries will aid in the collection and distribution of investible funds, they in no way lessen the need for real saving. The rate of investment which it is physically possible to carry out is limited by saving, and a "shortage of capital" -- in the sense of a shortage of real resources available for investment purposes -- cannot be solved merely by increasing the supply of finance.

A basic task of any financial system is to transfer resources from those wishing to lend to those wishing to borrow. By accepting financial liabilities, lenders release their surpluses (or savings) to others, presumably investors, who promise to repay from the financial surpluses which they anticipate (Newlyn 1977:Ch.1; Kitchen 1986; Meier 1989:178-182). If we aggregate over all borrowers and lenders (or savers and investors) in the economy, the familiar national accounting identities emerge:

$$(1) \quad Y = C + S$$

$$(2) \quad Y = C + I + X - M$$

where

- Y is gross domestic product
- C is aggregate consumption (private and public)
- S is gross domestic savings
- I is gross domestic investment (including inventories)
- X is exports of goods and non-factor services
- M is imports of goods and non-factor services.

Equating (1) and (2) and rearranging gives:

$$(3) \quad S - I = X - M$$

An excess of domestic investment over domestic saving is balanced by an excess of imports over exports, and vice-versa.

Identity (3) can hold in a variety of different ways. Consider, for example, some of the possible reactions to an increase in government expenditure without any change in tax rates. The rise in expenditure can:

- i. crowd out private investment through higher interest rates or credit rationing;
- ii. if there are idle resources (including foreign exchange), the increased demand may raise real output yielding higher tax revenues and increased private saving;
- iii. if there are no idle resources and monetary policy does not limit the growth of demand, prices will rise and government spending will be covered by forced saving (the so-called "inflation tax");
- iv. alternatively, the increased domestic demand may be matched by higher imports. That may occur through exchange depreciation or by a capital inflow. The latter could result from foreign aid, government borrowing from foreign banks, or private flows in response to higher interest rates.

In developing countries there are seldom sufficient idle resources of the required kind to permit a substantial "Keynesian" production response to higher government spending. Increased government spending is often directly linked to increased foreign assistance. Over the last decade, foreign banks have often been hesitant to lend to countries in SSA. Exchange depreciation has its own costs in terms of inflation and redistribution. The forced saving solution is costly and counterproductive, and interest rate effects have been too small to attract capital inflow.

The challenge for monetary programmers is to derive feasible combinations of fiscal, monetary, and trade policy which will be consistent with the saving-investment constraint as well as the constraints imposed by the balance of payments and the threat of accelerating inflation.

If properly undertaken, the monetary programming exercise is intended to bring out the full implications of fiscal and monetary decisions of governments and central banks. Considered relative to a particular base year, the growth of nominal income flows comprises a real resource component and an inflation component. That is:

$$(4) \quad g(Y) = g(P) + g(y)$$

where $g(P)$ is the rate of inflation (i.e. percentage change in the GDP deflator)
 $g(y)$ is growth of real GDP.

The growth of real income is normally presumed to be determined by the growth in the supply of productive inputs, their net productivity, the technology being used, the importance of external influences such as drought, the general development of internal infrastructure, and institutional elements such as the development of the legal system and degree of integration of the financial sector. The inflation rate is usually assumed to be related to excess demand in the goods and input markets, the militance of the unions, the growth of money and credit, import prices, changes in the exchange rate, and inflationary expectations -- which are, themselves, determined by the history of inflation and perceptions of the current trend in inflation.

Thus identities (3) and (4) are an important adjunct to the monetary programming exercise. They are particularly useful in highlighting the implied spillover effects (Laidler 1971:78-90; Gordon 1981). To illustrate, a low level of domestic savings relative to planned investment will increase the need to borrow abroad further exacerbating the external debt situation. And, by selecting a particular rate of nominal income growth in the monetary program, the central bank is simultaneously deciding to provide the credit which will be consistent with a specific rate of inflation.

A more sophisticated analysis of the spillover effects would examine whether the implied inflation target in the nominal income estimate is consistent with the real interest rate required to mobilize the domestic resources needed to match the gap between exports and imports. This gap depends on the real exchange rate which, in turn, is related to the official policy regarding the nominal exchange rate, the change in external prices, and the inflation rate implied by the assumed nominal income growth.

B. The Monetary Program

A monetary program sets target paths for major monetary aggregates such as the money supply or bank credit (Taylor 1979:132-135; IMF 1981; Niepoort, Hicks and Swinburne 1989). Such a program is needed to relate the central bank's day-by-day decisions to its medium-term macroeconomic objectives. Furthermore, the task of developing the program requires cooperation between the central bank and finance ministry to determine the implications of different combinations of fiscal and monetary policies. Finally, the existence of the program tends to limit the scope for ad hoc responses to changing economic circumstances.

Four steps are involved in formulating a monetary program. First, it is necessary to choose a target path for nominal income. The path should be one which is expected to produce an acceptable real output growth and inflation rate without inducing unacceptable pressure on the exchange rate. Second, a financial plan to achieve the nominal income path is required. It will include a program for the growth of bank credit and money supply as well as the government's fiscal proposals and arrangements for financing the operations and investments of the state-owned enterprises. The last two are necessary because inconsistencies between fiscal and monetary policies often cause large and destabilizing fluctuations in interest rates and exchange rates. Indeed, the central bank usually cannot achieve an acceptable growth path for nominal income without the explicit cooperation of the fiscal authorities.

Third, the circumstances which would lead to deviations from the program or require the formulation of a new program should be specified. Agreement among the fiscal and monetary authorities in this regard helps to ensure that the program will be adhered to if the forecasts of the major aggregates remain broadly on track. Such an agreement also limits the tendency to build a monetary program on the basis of unrealistically optimistic assumptions.

Fourth, an implementation plan must be developed. When direct controls are used the monetary program is made effective by means of the loan ceilings assigned to individual banks. Usually the central bank estimates the demand for money and quasi money which is thought to be consistent with the nominal GDP target. The expected change in net foreign assets of the banking system and the amount of bank credit required by the government are also estimated. The excess of the expected growth in money and quasi money is then the amount of new bank credit available for the private sector. That aggregate credit ceiling is then distributed to individual banks.

In an indirect control system the target for total money growth is set in the same way but the program is carried out through central bank control of the monetary base. Instead of assigning credit ceilings to individual banks the central bank must estimate the change in the monetary base consistent with the financial program. It then needs a plan for bringing those changes about. In doing so it has to take account of the changes in reserves required by the planned growth in the supply of money. Finally, the central bank has to develop operational procedures for injecting or withdrawing reserves.

In the following parts of this section we first discuss the task of selecting targets for the growth of nominal GDP. Second, we consider the problems of estimating the demand for money consistent with any given nominal GDP. Third, we discuss the

relation between the stock of reserve money and the amount of money. Fourth, we examine the problems of estimating the amount of reserves which must be injected or withdrawn. In each section, we shall consider the general problem and then review the procedures used by the study countries and the problems they face in carrying out those procedures.

C. Nominal GDP Targets

The formulation or revision of a monetary program begins with a review of the recent performance of the economy, taking into account the current inflation rate, any factors indicating stronger or weaker inflationary pressures, and prospects for the exchange rate and balance of payments. The review would also evaluate the growth of output relative to its medium term potential. The main result of this review would be the decision to speed up or slow down the growth of nominal demand.

That decision will reflect judgments as to the division of any increment to nominal demand between prices and output. It will also reflect the government's current inflation control objectives and its balance of payments and exchange rate targets.

i. Policy Objective: Balance of Payments

The balance of payments almost always imposes a constraint on the fiscal and monetary policies of developing countries. No government can be indifferent to its exchange rate even in a floating rate regime.

Some countries attempt to maintain a fixed rate in terms of a single currency or a basket of foreign currencies. Others seek to maintain a fixed real rate against some important set of currencies. Still others seek to move their real exchange rates in a way which is expected to improve their competitive position as exporters. Exchange rate objectives are usually chosen as part of a medium term plan and are therefore taken as given for the purpose of short-term programming.

The desired path for exchange rates is usually determined by concern about inflation as well as by longer term considerations. Governments also set targets for the change of net foreign assets. The objective may be to keep the growth of foreign exchange reserves in line with the growth of trade. At times it may be considered desirable and possible to hold larger reserves to provide more flexibility in adverse circumstances.

Given the foreign reserve objective, the capacity to import is determined by the projected foreign exchange earnings from exports plus the receipts from capital inflows and public and private transfers. That is, the import constraint and the exchange rate determine the maximum nominal income consistent

with the acceptable change in the foreign exchange reserves.

Accordingly, the programming exercise has to include estimates of the changes in the value of imports for the coming year which can be expected to result from changes in foreign prices or other exogenous factors such as crop prospects. It is also necessary to have some estimate of the incremental imports associated with changes in major components of domestic expenditure. Given those data it will be possible to estimate the income level consistent with the balance of payments objective.

ii. Policy Objective: Inflation

Decisions about the target growth for nominal income will be strongly influenced by the policy makers' perceptions of the trade-off between price stability and output growth. Most governments would prefer price stability if it could be achieved at low cost. But many LDC policy makers believe that in the short run output growth will be significantly retarded by any policy which slows the growth of nominal demand. By contrast, many of their advisors (including the IMF) tend to minimize the output loss which may be associated with price stabilization programs.

As evident in identity (4) above, any change in the growth rate of nominal GDP must affect the rate of change of either prices or output. In practice, both will be affected (Harberger 1978).

The experience in SSA, however, suggests that governments cannot increase real output much, if at all, by simply spending more on development projects or by expanding the credit available to parastatals or the private sector. Though some slack may exist in the economy it is likely to absorb only a fraction of any increase in real demand. The rest will go into imports or higher prices¹¹.

Unfortunately, experience also suggests that avoidance of excess demand does not necessarily prevent inflation. Many inflations have been started by supply shocks, e.g. increases in import prices or crop failures. Others have resulted from devaluations which were needed to offset a loss of export revenue or to make a long overdue adjustment of an overvalued exchange rate. Moreover, when the effects of past supply shocks or past episodes of excess demand have not been offset, expectations of continued inflation develop. Indeed, as a consequence of supply shocks and the mismanagement of demand, inflation has become endemic in many countries of SSA.

It is sometimes argued that the link between excess demand and inflation can simply be reversed. If excess demand causes prices to rise without raising output, it is argued that a deficiency of demand should offset supply shocks or slow down an "inherited"

inflation. That conclusion is far from obvious. There are many reasons why the response of markets to deficient demand may be different from the response to excess demand. There have been episodes when firm limits on nominal expenditure growth have halted inflation with no more than a brief slowdown in output growth. Equally, there have been cases in which output had to stagnate for several years to bring down inflation (Bruno and Sachs 1985:Ch.10; Fry 1988:327-335; Goodhart 1989:Ch.XIII).

Balance of payments and inflation control considerations impose two separate constraints on the growth of nominal income. In the longer term appropriate adjustment of the exchange rate together with structural changes may bring the two constraints together. Nevertheless, changing circumstances affecting both inflation and balance of payments make it impossible to keep the different sectors of the economy in continual balance. For monetary programming purposes, the lower constraint is the relevant one.

iii. Policy Objective: Credit Distribution.

The programming exercise should include an examination of the credit market implications of the interaction between the proposed growth paths for monetary aggregates with the public sector borrowing requirement (PSBR) and other nonmonetary factors influencing demand. In this respect, policy makers need to be concerned about the processes by which various types of expenditure may be crowded out when total expenditure is constrained by limits on the supply of money or credit. The crowding-out process works differently when indirect controls replace direct controls.

Under a system of indirect controls, the level of interest rates will be determined by the interaction of the supply of and demand for credit. The former is determined by the reserve management operations of the central bank.¹² Demand for credit will reflect the risk and return considerations influencing private borrowers but the demand of the public sector will also play an important role.

Because of its sheer size in most countries of SSA, changes in the PSBR have particularly significant effects on the level of interest rates. Even a qualitative judgment of these effects may indicate the need for a revision of the fiscal program.

Once the tentative judgments are reached about objectives for balance of payments, inflation, and credit distribution the next task in the monetary programming exercise is to estimate what alternative growth rates for nominal GDP imply for inflation, real GDP, and the balance of payments. This usually involves the use of formal and judgmental models in programming.

These approaches are taken up after we discuss the question of

the links between money supply and nominal GDP.

D. The Link Between GDP and Money

The second task in monetary programming is to estimate the monetary implications of the chosen target for nominal GDP. The traditional approach has been through some version of a demand for money function.

The conventional approach to monetary analysis starts from the assumption, sometimes explicit but often implicit, that the supply of money is exogenously determined either by a direct link to the balance of payments or by central bank decisions as to the growth of reserve money. These models also assume that the demand for money is related to nominal GDP in some simple, stable way. If that were indeed the case, there would be a direct and simple link between the central bank's decisions about money supply and the movement of nominal GDP. Moreover, to the extent that real GDP is supply-determined, control over nominal GDP would imply control of price level movements.

If the central bank knows the relation between the demand for money and nominal GDP it should, it appears, be able to realize its nominal income objectives by supplying the amount of money demanded by the public at the target level of nominal GDP. In the textbook case the money demand is proportional to nominal GDP so that:

$$(5) \quad M = k.P.GDP^*$$

where $P.GDP^*$ is the target for nominal GDP
 k is the velocity of circulation of money.

In practice it may be necessary to estimate the values of some other variables which may enter the demand for money equation.

A considerable literature, both theoretical and empirical, indicated that the demand for money could be readily estimated as a stable function of a small set of variables (Adekunle 1968; Laidler 1969; Teigen 1970; Friedman 1974; Kaufman 1989:Ch.29). However, from the early 1970s it has been apparent that the money demand functions are neither simple nor particularly stable (Goldfeld 1973; Goodhart 1989:95ff.; Mayer, Duesenberry and Aliber 1990:272-276). Numerous factors were responsible. First, there has been considerable difficulty over the appropriate definition of money. Second, "Goodhart's Law" which asserts "that any observed statistical regularity will tend to collapse once pressure is placed on it for control purposes" (Goodhart 1989:100n) has been relevant particularly during the ascendancy of "monetarism" during which macroeconomic policy was based on achieving steady growth in the major monetary aggregates. Third, the so-called "Lucas critique" (Lucas 1976; Mankiw 1990:1647-8)

questioned the validity of macroeconomic projections based on models whose microeconomic foundations were suspect or had been rendered irrelevant because of a change in policy regime (Walsh 1982).

Taking these difficulties into account, it is not surprising that the monetary authorities in the countries we have studied have all had difficulty estimating money demand. Annex B reports our efforts to estimate some relatively simple links between the money supply and GDP.

Figure 1 in Annex B shows that the velocity of circulation of money in the study countries has been far from constant. Velocity has varied over a wide range in each of the countries and year-to-year percentage changes are large relative to changes in real GDP.

To place the issues involved in context, it may be useful to review briefly the main points in the theory of demand for money and then to examine some of the sources of variation in the ratio of M2 (currency plus demand, savings, and time deposits) to nominal GDP.

i. Theories of the Demand for Money

Theories of the demand for money have played a major role in macroeconomic analysis as far back as the 17th century. Until fairly recently attention centered on narrowly defined money (currency and checkable deposits) as a transactions medium. Since the 1930s, however, "broad money" which includes noncheckable time and savings deposits in addition to narrow money has played a more central role in monetary theory. The shift reflects changes in the competition among depository institutions and in the ease with which deposit holders can shift funds from one category of deposit to another. Broad money, in turn, is considered to be one among many competing elements in assetholders' portfolios.

Household and business investors allocate their investible resources among different kinds of assets. In doing so they take account of the prospective return, risk, and convenience offered by the different alternatives. In the following section we consider some of the factors affecting the choice between money and other assets.

ii. The Return on Money and Other Assets

In the developed countries much of the variation in the ratio of money to other assets is attributed to changes in the perceived advantages of money relative to a variety of nonmonetary financial assets, such as short-term government securities or CDs, which can be readily converted into money. While

considerations of convenience, liquidity, and safety are also relevant, variations in the spread between rates offered by banks and those available on other liquid assets are usually supposed to play a central role in variations in the demand for money (Goodhart 1989:Ch.III).

In most developing countries, formal markets in high grade short term securities are relatively undeveloped. Nonetheless, money does compete with other assets (Tun Wai 1967; Coats and Khathkate 1980:13-16). When the interest rates offered by banks are low relative to the returns available on real assets, and particularly when interest rates offered by banks do not compensate for inflation, asset holders tend to shift out of domestic money and into foreign currency or foreign deposits when they can do so at reasonable cost. Others will bypass the banks and lend through the informal credit markets at interest rates that are positive in real terms. Still others will acquire physical assets directly. It is important to recall that asset-holders will make such shifts in response to changes in confidence in the banking system, in the exchange rate, or in the exchange control system as well as to changes in interest rate spreads. Moreover, the changes just discussed cannot be readily measured and cannot therefore be included in regressions. Accordingly, we must expect a good deal of unexplained variation in the demand for money.

iii. Currency Substitution

Demand for the money of any one country will be reduced by currency substitution, that is, when residents of the country in question use another country's currency or deposits for transactions or investment purposes (Tanzi and Blejer 1982; MacDonald 1988:Ch.7; Guidotti 1989). Such shifts occur in response to rapid inflation, depreciation of exchange rate, the intensification of exchange controls or in the expectation of any of those events. Bank failures or the fear of bank failures often accelerate this process.

Several types of currency substitution may be distinguished. In SSA rural people who usually hold currency rather than bank deposits often hold and use the currency of an adjacent country as an asset and for transactions purposes. In the urban areas, people may hold investment funds abroad. Others may make current payments by transfer of deposits in foreign banks. Currency substitution has been important in some Latin American countries which have experienced rapid inflation. It has also been significant in many parts of SSA. The potentially rapid variation in the amount of currency substitution causes difficulty in managing monetary policy.

Currency substitution will be reflected in capital flows (including errors and omissions) in the balance of payments and

changes in net foreign assets of the banking system. In countries which use reserve control to manage their money supply, currency substitution will change the income velocity of money and the GDP associated with any (measured) money supply. Finally, currency substitution directly affects the reserve base and will have to be offset in order to achieve any given money supply target.¹³

iv. Informal Credit Markets

Many countries have regulated the rates paid on deposits and loans by the formal financial institutions, particularly the banks. When real interest rates become low or negative, some savers find it worth the extra trouble and risk to obtain better returns by supplying funds to borrowers outside the banking system. They may lend directly on a face-to-face basis to borrowers with whom they have had some prior relationship. Or, they may lend through informal intermediaries. In some cases, the informal lenders grow in size and establish themselves as "finance companies" or "investment houses" whose activities are well known but outside the regulatory and monetary control system.

Some of the shifts between money and other assets may reflect factors such as confidence which are not directly related to changes in money supply but some of them may be more directly induced by the money supply process. Shifts in the supply of credit to the private sector may raise interest rates in the informal credit market and thereby reduce the demand for money. This and similar processes are discussed further in the section on the transmission mechanism. For the moment we only need to note that interactions of that kind can be important in the accounting for variations in velocity but cannot be captured in most regression models.

Variations in the factors causing currency substitution, the use of informal credit markets, as well as changes in the differential between the returns on monetary and real assets and the convenience of using monetary assets can account for much of the variation in the ratio of money to GDP. Changes in the level of real income, in the extent of commercial as opposed to subsistence agriculture, and in the degree of urbanization usually cause gradual changes in the demand for money. Occasionally, however, as in the Nigerian oil boom, more rapid changes in monetization can occur. Once again it is important to recall that many of the factors causing variations in money demand cannot be measured precisely.

All those considerations are reflected in the varying ratios of money to GDP shown in Figure 1 in Annex B. In an effort to improve on the simple fixed velocity assumption we tried a number of regressions. The main results are reported in Annex B. They

show that the levels of money are highly correlated with the levels of nominal GDP in all of the countries. However, that result simply reflects the strong upward trend in all nominal magnitudes over the last twenty years. The correlations between the rates of growth of money and nominal GDP are much lower. The prediction error in the regression of GDP on money often exceeded 10% during the sample period.

We initially included interest rates and inflation rates as well as GDP in the regressions but found that the results were so sensitive to changes of specification that we did not consider them reliable.

E. Forecasting Nominal GDP

Estimating the money supply which will be consistent with the nominal GDP target is a regular part of the monetary programming exercise.

The main concern, however, is not to predict the money supply from nominal GDP but to predict the nominal GDP from nominal money supply. The central bank can control the money supply but it cannot control nominal GDP unless it can forecast the effect of monetary control actions on nominal GDP.

We have examined three fairly simple schemes for using nominal money supply to forecast nominal GDP. In the simplest method we assume that velocity for year t is the same as velocity in year $t-1$. The others are based on regressions between money and GDP. Table 3 shows the percentage standard error of the forecasts, i.e., the deviation of the actual from the estimated values measured as a percentage of the actual values. For example, the datum in the first cell of the table indicates that the average percentage deviation of the predicted values of nominal GDP in Nigeria derived from the log regression of nominal M2 and M2 lagged on nominal GDP from the actual value of nominal GDP is 8.3% over the period 1971-1988 in Nigeria. For Senegal, the average deviation is 12.5%, and so on.

A second approach is to regress nominal GDP on current and lagged money supply. Since the regression of money on GDP yielded high correlations one might hope that the inverse regression would help the forecaster. In fact the forecast errors were better than those of the simpler method in three of the five cases but somewhat worse in the others.

A third approach bases the forecasts on logarithmic first differences. While the correlation coefficients are much worse than for the regressions based on levels the distribution of forecast errors is not much different from that obtained from the absolute value regressions.

Table 3: Percent Standard Error of GDP Projections
Nigeria, Senegal, Gambia, Malawi and Ghana

Variables: Nominal M2 and GDP in logs
REGRESSION: $LNGDP = a + b(LNM2) + c(LNM2)_{.1}$
1971-1988

Nigeria	Senegal	Gambia	Malawi	Ghana
8.3	12.5	5.6	7.9	17.0

Variables: Nominal M2 and GDP
CALCULATION: Estimated GDP = $[(GDP/M2)_{.1}] * M2$
1971-1988

Nigeria	Senegal	Gambia	Malawi	Ghana
13	11	20	12	14

Variables: M2 and GDP in log first differences
REGRESSION: $LNGDP = a + b(LNM2) + c(LNM2)_{.1}$
1972-1988

Nigeria	Senegal	Gambia	Malawi	Ghana
8.7	5.7	7.3	6.1	14.6

Outside of Sample Forecast of LNGDP for 1987, 1988

Variables: Nominal M2 and GDP in logs
REGRESSION: $LNGDP = a + b(LNM2) + c(LNM2)_{.1}$
1971-1986

Year	Nigeria	Senegal	Gambia	Malawi	Ghana
1987	-17.2	-18.6	-10.8	-14.0	-12.8
1988	-16.3	-28.3	-6.5	-6.6	-23.5

The results obtained by any of these approaches are subject to an important qualification. Each relationship reflects the underlying monetary dynamics of the respective economies which have emerged over an extended period of time. These dynamics will not necessarily hold if there is a change of policy regime

as, for example, when the central bank shifts from direct to indirect monetary management.

Another qualification is that the results are derived from single-equation estimates. The regressions typically relate nominal GDP to money, lagged money, time, and some measure of the opportunity cost of money. No other economic variables have been included. As a demand for money equation, this relationship may be satisfactory. However, it is a somewhat simple-minded explanation of nominal GDP. Other nonmonetary variables, such as government spending and exports, have a strong influence on income.

The use of a single equation in which nominal GDP depends on nominal money supply is based on the assumption that the monetary variable dominates everything else. Increased government expenditures are presumed to "crowd out" other expenditures because the limit on the money supply prevents other variables which might affect GDP from actually doing so. That is the result one gets in the textbook "vertical LM" case. Under these circumstances, the crowding out occurs through higher interest rates or tighter credit rationing.

An alternative explanation of the observed links between money and GDP is that the money supply data are related to, or strongly influenced by, other factors which affect spending. In developed countries that comes about when central banks are reluctant to allow interest rates to increase. They may accommodate increased government expenditures by increasing money supply to avoid sharp increases in interest rates or the prospect of a credit crunch. Statistically, money may be highly correlated with income under these conditions but it makes no sense to reverse the relationship so that money is the active variable.

There has certainly been a good deal of accommodation in the monetary policies of the countries we have studied although it has usually taken the form of financing the government deficit or the investment programs of the state-owned enterprises. Changes in export receipts, capital flows and remittances which are not offset or "sterilized" by the central bank have a similar straightforward effect on the money supply. For instance, since exports are often a large component of GDP and unsterilized changes in export receipts increase the money supply, there will be a high correlation between the money supply and GDP.

When the monetary policy regime has been accommodating, a regression which relates GDP to the money stock will reflect the factors which influence money demand¹⁴. (It will differ from the regression fitted in the other direction only because of correlations between the error terms in the demand for money with the movements of GDP.) It does not take any account of the nonmonetary forces affecting GDP. If the relationship is used

for forecasting in a period when the policy regime has changed the equation will produce poor forecasts.

That observation implies that forecasts of nominal GDP must take into account the prospective influence of other variables besides the money supply. That would require the use of a more complete model of the expenditure side of the national income accounts. In the circumstances, however, a more detailed model would not be practical. The data are not adequate for the task.

The absence of a larger formal model need not prevent policy makers from adopting a variety of consistency checks. These would, among other things, derive the implications of a forecast based on a money demand analysis from the expected changes in other factors such as exports, government expenditure, and investment as well as domestic or international price developments.

Some of the problems of using formal and judgmental models in monetary programming are discussed in the next section.

V. Monetary Programming in Practice

In developed countries many analysts use econometric models to determine the range of price and output changes generated by alternative sets of fiscal and monetary policies (Bryan and Gavin 1991). In countries with stable economic structures and good quality macroeconomic data, exercises of that type have often been useful. Even there, however, competing models often imply a wide range of outcomes for a given set of policies (McNees 1990). In most of the countries of SSA the use of formal models is impeded by the lack of accurate and timely data, by changes in the economic structure, and by disagreement over the appropriate conceptual framework.

a. Data, Models, and Concepts

In most African countries including the ones we studied, national income data are available only with a considerable lag. Analysts must "forecast" the present as well as the future. And even when they are available, the national income accounts have limited coverage and detail. They typically include estimates of GDP and major production categories but the figures are derived from an incomplete data base. Moreover, since data on expenditures and private income are limited there is no inherent cross-check of the discrepancy between estimates from independent sources.

The data base for trade statistics is generally more satisfactory but the record is often distorted by smuggling and by parallel market trading in foreign exchange.

Price data are often limited to import and export prices together with some cost of living data for one or more urban areas. Most of the price indexes have base weights which are seriously out-of-date¹⁵.

These data problems inhibit the development of the kind of formal macroeconomic models used in the developed countries. Yet, even if there were no data problems, model building would be difficult. The economies of SSA have been undergoing rapid structural change over the past thirty years and, at the same time, have been subject to frequent shocks from political instability, financial crises, and inflation. Changes in exchange rates and trade restrictions and other aspects of trade policy have been common. While the underlying productive structures of the economies in SSA have often changed slowly, rapid shifts in regulatory and policy regimes confound the model builder. Worse, many of the de jure regulations are not those which are applied de facto.

Furthermore, the conceptual models for many of the important macroeconomic processes which influence developing economies are not widely agreed (Klein 1965; Porter and Ranney 1982; Taylor 1979; Robinson 1989). There is no general agreement about the ways in which variations in domestic demand interact with supply side factors such as import prices or changes in food production. Nor is there any widely accepted view of the way demand is affected by government expenditures, export earnings, and credit to the private sector. Furthermore, there is little agreement as to the importance of money supply growth compared with the growth of credit.

In those circumstances policy makers must use relatively simple analytical schemes and rely heavily on judgments regarding the underlying structure of the economy and how the major economic aggregates are moving. These considerations indicate that the analytical approach adopted should be sufficiently transparent to permit the use of judgments (for example) about the response of prices and output to changes in demand, or the price implications of changing exchange and interest rates.

Finally, in thinking about the overall programming exercise it is useful to remember that the monetary program always relates to increments in the relevant variables. The task is to project the increase in nominal GDP which will be consistent with agreed-upon targets for inflation, balance of payments, and exchange rate. One must then estimate the appropriate values for the increase in money supply and bank credit given the projected changes in the public sector deficit and net exports..

Short run projections of that nature are in some ways less demanding than longer run projections of output or prices derived from larger econometric models. Nonetheless, they depend heavily

on knowledge of special temporary factors which tend to average out in statistical relationships. Relatively simple models which can be adjusted to take account of special circumstances are usually the most useful. Ultimately it is not the accuracy of a particular model or the application of a specific analytical approach which will determine the success of the monetary programming exercise. Its success will depend on the willingness of the policy makers and their staffs to draw on as broad a range of data and techniques as possible on a regular basis to ensure that both the performance of the economy is appropriately monitored and, where necessary, corrective measures are taken. The effects of these measures, in turn, will have to be taken into account and further modifications made if needed.

In this way, monetary programming will be a continuing exercise designed to enhance the performance of the economy. The overall process will result in improvements in the data, projection techniques, and monitoring procedures. Most important, however, it will provide central bank and other officials with a much deeper understanding of the dynamics of money and finance in the economy. That, more than anything else, is essential to the success of any monetary policy regime.

b. Monetary Programming in the Study Countries

None of the countries studied had programming exercises which embraced the detail described above. However, all of them have some version of monetary programming which figures more or less prominently in either the government's attempts at macroeconomic control or the donor's determination of money and credit performance criteria.

i. Nigeria

After several years of rapid inflation and exchange rate depreciation Nigeria is now committed to a program intended to stabilize the exchange rate and bring inflation under control. Other policy objectives are to increase domestic savings and raise the level of investment and employment.

These objectives are being pursued using a variety of policies (CBN 1989; CBN 1990:Ch.II; Budget Address 1990:16-17). The use of exceptional financing is being limited, current exchange transactions are being deregulated, and the exchange rates (official and parallel) are being unified. To do those things while slowing inflation requires that the target for nominal domestic absorption should be consistent with a reduced rate of inflation and with the volume of imports which can be paid for with import capacity available at the existing exchange rate.

The national income component of the programming exercise requires cooperation between the central bank, the finance and

planning ministries and statistical services. The projections for national income, balance of payments and the budget result from the combined efforts of the different agencies. The central bank is responsible for the balance of payments projection, while the finance ministry deals with the budget. The budget and balance of payments projections make use of considerable qualitative detail such as prospects for the grain harvest. Some use is made of a medium term macroeconomic model which is based on the World Bank's minimum standard model. For reasons given above, however, the forecasts of real GDP rely heavily on informed opinions. Forecasts of inflation also depend on judgments about current trends in inflation rates together with information about factors affecting prices in important sectors.

Forecasts of that type must almost inevitably be based on the implicit assumption that the existing level of real demand in the sectors in question will be maintained. If inflation is not to be accommodated nominal demand must grow by less than the sum of the estimate of GDP growth and the first round projection of the inflation rate. Lacking any solid basis for estimating the loss of output required to reduce the inflation by one percentage point a somewhat arbitrary compromise is made.

ii. Ghana

Ghana has also been recovering from a period of severe inflation and balance of payments difficulties. It is also in the process of unifying a dual exchange rate system. The convergence process is now almost complete and only a few import categories remain on the exchange control list. The balance of payments position in the last few years has been greatly strengthened by large official capital inflows and by an increase in private remittances. The latter flow appears to represent a larger share of earnings of Ghanaians working abroad as well as repatriation of earlier earnings and capital outflows. Both categories may represent increased confidence in current economic policies.

In the last few years Ghana has made good progress in reducing the rate of inflation. Poor crops caused a new increase in the inflation rate in 1990 but inflation control remains a major policy objective (Bank of Ghana 1990). Ghana also seeks to stabilize the exchange rate after the process of trade liberalization and exchange rate unification is complete.

The monetary programming exercise depends on the cooperation of several agencies. The statistical service prepares GDP and price forecasts. The central bank estimates the demand for money and the balance of payments (in conjunction with customs, statistics and the ministry of finance). The ministry of finance estimates the credit required by the government.

Although some parts of the analysis are relatively sophisticated,

a major gap exists in the estimates of imports and inflation. Imports are derived residually from other balance of payments data and then assessed for its "reasonableness." The difficulty is that the change in net foreign assets, which is typically a target in the programming exercise, is also used in deriving imports. The estimate of inflation is negotiated between the central bank and the ministry of finance.

iii. Malawi

Malawi had some difficult years in the early eighties but now appears to be on a relatively stable macroeconomic growth path (Gulhati 1989). The reported inflation rate is lower than in most other Sub-Saharan Africa countries and it has had less exchange depreciation.

The aim of the central bank's macroeconomic policy is to continue that record. As yet, however, monetary programming does not figure prominently in the bank's activities. The IMF exercise to determine limits on credit creation provides the basic framework (Bolnick 1990). Recent efforts among the bank's staff have focussed on developing a set of procedures for monitoring and ultimately controlling the monetary base.

iv. Senegal

In Senegal, monetary programming requires an interaction between the staffs of the BCEAO and national Agence. The staff of the latter, in turn, must work with the finance and planning ministries. The BCEAO bases its national income analysis on an analytical framework (BCEAO 1979; Nelson 1991) in which the output of certain important sectors of the economy -- mainly primary products and some other tradeable goods -- is presumed to be driven by supply conditions. Those conditions include world prices and domestic policies affecting incentives to produce. The output of the nontradeable sectors is presumed to be driven by demand including, of course, demand derived from the incomes of producers in the tradeable sectors.

To implement this model the BCEAO makes a detailed forecast of the output of the tradeable sectors. That forecast is based on judgements which reflect a detailed analysis of the factors currently affecting production in each subsector. Historical data including some econometric estimates are used to link the results of the first exercise to the prediction of output in the remaining sectors. A separate analysis of the outlook for prices reflects the information assembled for the GDP forecast.

The parallel exercise produced by the national agency is then compared with the BCEAO results. After some effort by the staffs to reconcile the two forecasts a compromise is worked out which provides the basis for decisions regarding money supply targets

and credit ceilings.

v. The Gambia

Under its economic recovery program, The Gambia has successfully cut the public sector deficit, reduced the growth of money and credit, stabilized the exchange rate and sharply reduced inflation. Monetary programming has been critical to the whole effort. The program focussed on the derivation of ceilings on credit creation for the government and parastatals and minimum levels of foreign exchange accumulation.

No independent capacity to develop such a program existed in The Gambia until recently so the Gambian authorities typically based their policy decisions on the targets and projections derived by the IMF. With donor assistance, some improvements have occurred in the central bank capacity. The IMF exercise still lies at the core of monetary control in The Gambia, nonetheless.

VI. Issues in Reserve Management

Once a central bank has chosen a path for the growth of money supply and developed a consistent monetary program, it has to control the growth of reserve money. The lag between changes in reserve money and changes in the money supply is relatively short. Therefore, the forecasting problems in reserve management operations are far less daunting than those related to nominal income growth and money supply targets discussed earlier. When timely information is available, central banks can adjust reserves monthly, weekly, or even daily in order to close any gap between the money supply target and the actual money stock.

In developing countries, however, there are always serious lags in the collection and processing of information on macro variables. For that reason the central banks will often be "flying blind" as they attempt to manage reserves. They will have to base their estimates of the current situation on a combination of timely but partial information, accurate but out-of-date information, and signals provided by movements in variables such as interest rates and exchange rates.

In developed countries central banks often seek to achieve precise control over a particular monetary aggregate or the short-term interest rate. To do so they can withdraw or inject reserve money on a daily basis if the need arises. In the countries we have studied this approach would be difficult. The emerging interbank and short-term securities markets are thin and potentially volatile. More modest objectives are warranted. A further consideration in reserve management is that the central bank should conduct its own actions in ways which do not add to that volatility. Accordingly, the actions taken to affect

reserve positions should be limited. That will require relatively frequent manipulations. At the same time the central bank has to resist changing its reserve operations in response to day-by-day changes in interest rates and other indicators of credit market conditions. To satisfy these conflicting requirements, it is useful for the central bank to formulate a reserve management plan covering (say) a month.

The plan would call for a series of actions to add or withdraw reserves. It would reflect the information available at the time of its formulation as well as projections on the basis of expected changes in government or foreign accounts and agricultural and other seasonal developments. It should call for some adjustments in the plan as new information emerges. That procedure should make it possible to let the monetary program rather than the short-term market fluctuations guide the reserve management process. Nevertheless, when the market strongly signals some unexpected change it will be necessary to review and revise the program.

The need for central bank action to influence the supply of reserves may arise from changes in the money multiplier, from uncontrollable factors affecting reserves, or to provide the reserve base for a net increase in the money supply.

In the following sections we first review the factors which cause changes in the money multiplier. We then examine the determinants of reserve money and the various ways that central banks add to or withdraw reserves. Finally, we discuss some of the special problems facing the central banks in The Gambia, Malawi, Nigeria, Ghana, and Senegal as they begin to work out techniques for reserve control.

A. Changes in the Money Multiplier

Implementing the monetary program requires central bank operations to control the supply of reserve money (Batten et al. 1989; Goodhart 1989:Ch. VI; Mayer, Duesenberry and Aliber 1990:Ch. 12; Meulendyke 1990). Reserve money imposes a limit on the money supply (i.e. currency and deposits) because a certain proportion of the money supply is held in the form of currency and banks must hold a proportion of their deposits at the central bank as reserves. Yet, even if the banks are not required by law to hold reserves, they normally maintain modest reserves as working balances. The money supply is therefore a multiple of the amount of reserve money. The multiplier depends directly on the currency/deposit ratio and the reserve/deposit ratio¹⁶.

There have been significant year-to-year changes in the money multipliers of countries in SSA¹⁷. Annual changes of 10% to 15% are common. For instance, over the period 1970 to 1989, the money multiplier in Malawi ranged between 1.5 and 4.4. Its

average was 2.7 and its standard deviation was .82 (Bolnick 1990:52a). Dealing with variations of this magnitude would require significant adjustments in the reserve base by the central bank simply in order to offset changes in the money multiplier.

The money multiplier depends mainly on three factors. First, some of the money supply is held as currency, the demand for which is determined by the general public based on their payment practices, liquidity preference, the rate of inflation, expectations of exchange rate movements, and opportunities for alternative financial investments. Second, banks must hold reserves equal to a certain proportion of their deposits. In order to expand their loans banks have to acquire additional reserves. Third, for prudential purposes or because of the lack of attractive opportunities to expand their loans and advances, banks may choose to hold excess reserves.

When the money multiplier is stable, central bank operations to change the supply of bank reserves result in proportional changes in the money supply. Variations in the money multiplier complicate the control task but, if the relevant data are available in a timely fashion, the central bank can ordinarily adjust its operations to offset any undesired changes in the money multiplier.

B. Management of Bank Reserves

Central banks in different countries use a variety of techniques to achieve their reserve objectives (Kareken 1969; FRB Chicago 1982; Hodgman and Resek 1983; Meulendyke 1986, 1990:Ch.6; Johnston n.d.; Goodhart 1989:Ch. VI; Meek 1990). Before reviewing these techniques, it will be useful to make a few general comments on the problem of reserve management.

First, some factors affecting reserves cannot be controlled by the central bank. For instance, the central bank does not control the volume of currency outstanding although its policies can influence how much currency is held. Nor does it control the volume of foreign exchange reserves though, again, some policy actions may affect them. Finally, the central bank does not control the amount of government deposits unless there is some explicit agreement as to how they are to be managed. To prevent distortions in the programmed growth of bank reserves, the central bank will normally attempt to neutralize the effects of these factors through so-called "defensive" reserve operations.

Second, the volume of currency outstanding tends to increase with the growth of the economy. Defensive reserve operations are required to offset the loss of reserves by commercial banks when they pay out currency. Since the volume of currency is large relative to other factors affecting reserves the central bank's

defensive operations will normally be reserve-creating.

Third, the normal expansion of an economy produces an increase in bank deposits. This will require a corresponding growth in bank reserves. To accommodate this expansion, the net change in all the factors affecting reserves will normally be positive. Central bank reserve operations usually allow for this factor in their programming exercise.

Nonetheless, as economic conditions change there will be periods when it is necessary to slow the pace of reserve creation or even reverse the process¹⁸.

a. Creating Reserves

There are numerous techniques for varying the volume of reserves. Some can be used to change reserves in either direction; others have an asymmetrical effect. Creating bank reserves is not difficult since the central bank can always find ways to lend money. The problem is to make it possible to limit central bank lending to the amounts required for programmed reserve creation. Direct lending to the government, for example, is simple but may not be easy to control.

Accordingly, central banks usually seek lending arrangements which permit them to decide how much is to be lent. In countries with a large open market in government securities the central bank may refrain from lending directly to the government. Government securities are acquired in the open market rather than from the Treasury. The central bank and not the Treasury then decides how much central bank credit is extended to the government (Young 1973; Meek 1985).

The "refinancing" of particular types of loans allows the central bank to add reserves to the system without providing reserves to an individual bank. The refinancing system works as follows. The central bank announces a set of preferred loan categories. It also announces that if a commercial bank makes a loan at specified interest rates to borrowers in these categories, the loan can be refinanced at the central bank on terms which provide a margin of profit to the lender. Although the particular commercial bank making the loan will quickly lose reserves when the borrower spends the proceeds, the central bank refinancing provides additional reserves for the banking system as a whole. The effect is the same as if the central bank had lent directly to borrowers in the preferred categories but had used the commercial bank as the agent for the paperwork¹⁹. Because refinancing arrangements have been difficult to control, they are generally being phased out.

Most central banks offer some sort of "discount window" facility so that individual banks with short-run liquidity problems can

borrow reserves for limited periods. If the discount window is operated on a generous basis a large volume of reserves may be created²⁰. In countries with only a few banks, extensive use of the discount window for general reserve creation makes the banking system excessively dependent on the central bank and tends to relieve bank managers of the responsibility for raising their own resources.

In order to limit the amount of reserves created by borrowing from the central bank, various control mechanisms have been introduced (Batten et al. 1989). For instance, the Bank of Italy charges discount rates which increase with the amount borrowed so that market rates are forced up whenever there is a general increase in bank lending and a consequent demand for additional reserves. By contrast, the discount rate set by the Bank of Canada is always at a premium over the last treasury bill auction rate. To raise market rates the Bank withdraws reserves from the system. Commercial banks are then forced to borrow at the premium rate (Meek 1990).

A third way of limiting reserve creation is for the central bank to operate a "pseudo market" for reserve bank credit which permits commercial banks to submit bids for a share of a pre-announced total of central bank loans. Such an approach allows the central bank to control both the level and cost of the additional reserves it is prepared to create.

As a means of enhancing reserve management, some central banks have also attempted to establish markets in specified private assets. One approach has been for the central bank to help develop markets for negotiable obligations of banks and to arrange to buy these obligations from the market rather than from the originating bank. "Discount Houses" have sometimes been created as intermediaries for this kind of lending. For many years, the Bank of England chose to supply funds to the market by lending to the London Discount Houses which, in turn, lent to commercial banks (Sayers 1957, Ch.5; Clayton et al.1974).

Government deposit accounts can be used in several ways. In the United States, the Treasury and the Federal Reserve have an arrangement which limits the variation in the Treasury's accounts at the Federal Reserve Banks. In Canada, by contrast, the Bank of Canada is authorized to use certain government accounts to influence bank reserves in either direction (Chant 1991). It moves funds from these accounts at the Bank of Canada to commercial banks to increase reserves and reverses the operation to reduce reserves. This arrangement cannot provide a means of dealing with the upward trend of required reserves or the reserve drain from the growth of the currency noted earlier but it is useful as a short-run adjustment device.

b. Removing Excess Reserves

A major transitional problem confronting central banks in SSA is how to sterilize the excess reserves which banks are holding in ways that do not impose additional financial difficulties on either the banks or the government. Removing reserves from the system, when that appears to be necessary, has taken many forms. The most common is open market operations in government securities. This approach works in either direction with the central bank creating reserves by buying securities and reducing reserves by selling them.

Some central banks have sold their own obligations as a means of reducing bank reserves. For instance, Bank Indonesia has developed a market for its own certificates. They are sold at auction in whatever amounts are required to achieve Bank Indonesia's objectives. After the initial auction commercial banks needing reserves may sell the central bank certificates to other banks which have excess reserves (Cole and Slade 1990).

It is not difficult in principle to find the means of controlling reserves. The basic instruments exist or can be readily created. The main difficulty is in achieving close day-to-day control because of inflexibilities in the money market, because bank reporting systems do not provide timely information, or because the size of the public sector deficit results in reserve creation beyond the limits which the central bank deems prudent for monetary stability.

c. International Financial Flows

International financial flows usually have a significant influence on the control of reserves. The response of capital movements to changes in monetary policy may seriously limit a central bank's freedom to control the monetary base, monetary aggregates, or interest rates²¹.

For countries which have no capital controls and are committed to a fixed exchange rate, capital movements are likely to be sensitive to the spread between domestic and international interest rates. The spread required to attract capital inflow will depend on local conditions such as expected and actual inflation, confidence in the stability of the exchange rate, opportunities for profitable investment, the range and attractiveness of local financial instruments, and vulnerability of the economy to external shocks. As the interest rate spread narrows, private capital outflows will tend to exceed official capital inflows. The pressure on foreign exchange reserves will become more intense effectively imposing a lower limit on the level of local interest rates. Moreover, the central bank cannot maintain a domestic money supply in excess of the amount demanded

by the public at the critical interest rate.

Nonetheless, it is unlikely that large volumes of portfolio capital will be attracted by interest rate differentials in most countries of SSA. In general, the potential for capital movements imposes a lower limit on interest rates but it does not seriously inhibit the movement of interest rates to higher levels when that is appropriate for domestic policy reasons.

Countries with floating exchange rates are affected by international financial flows in a different way. Relatively high interest rates encourage capital inflow and low rates discourage it but in the absence of central bank intervention capital flows will tend to affect exchange rates rather than the net foreign assets of the banking system. Over time, the exchange rate adjustment should bring the flow of goods into line with the capital flows. While such a response does not prevent the central bank from achieving its money supply or interest rate objectives in the short run, it does change the longer-term response of output and prices to any given monetary policy.

The monetary reforms now underway or proposed in the countries of SSA will link the financial markets there more closely with world markets. The reforms are intended to encourage the development of open financial markets, promote competition among the banks and other financial institutions, and expand the range of financial instruments. If successful they will make it possible for the central bank to use the money markets for the indirect control of monetary aggregates and interest rates. Those developments will also facilitate comparison of domestic and foreign interest rates as a means of encouraging capital inflow.

Under these circumstances, shifts between domestic and foreign investments will become feasible for a wider range of investors. Domestic markets will become more sensitive to changes in foreign financial markets (Versluisen 1981; Lamfalussy 1985; Economist 1985; Johnson 1985; Bruno 1988; Economist 1990; Mathieson and Rojaz-Suarez 1990). Moreover, the improved international financial linkages will make it increasingly difficult for the monetary authorities to maintain local interest rates below the risk-adjusted levels which are available abroad. Nonetheless, because of risk considerations, perceptions of limited liquidity, and instability in the exchange rate, it may be difficult to attract foreign funds even at high interest rates²².

While much attention has been given to the implications of movements of portfolio capital induced by interest rate differentials, movements induced by risk considerations have often been more important. The residents of developing countries have often moved very large amounts of capital in or out in response to changing perceptions of the risk of holding their assets locally. The risks in question include possible capital

losses due to exchange controls, devaluation, political instability, or the prospect that fiscal mismanagement will lead to accelerating inflation.

Once a capital flight has begun it can be checked only by decisive action which provides convincing evidence that the fears which inspired it are no longer warranted. Responding to these fears imposes even stronger constraints on domestic policy than the movements of portfolio capital in response to interest rate differentials (Hallwood and MacDonald 1986:233-235; Krugman 1988:77-78; Bruno 1988).

i. The Special case of UMOA²³

The possibility that indirect monetary control might be adopted by Senegal while other countries of the UMOA continue to use a credit ceiling approach raises a special aspect of international transfers (Berlin 1988; 1990). If Senegal wished to move to indirect controls, some method of controlling the supply of reserve money from domestic sources could be devised with the other members of the UMOA and the BCEAO. Various administrative problems would no doubt arise but they could be resolved. More serious difficulties are likely to arise from capital flows between Senegal and France as well as the other countries of the Union (IMF 1990).

The transition to indirect controls would imply a willingness to let banks in Senegal compete for deposits and loans and make their own decisions about the allocation of credit within the limits imposed by their ability to attract funds. That would in itself involve a considerable adjustment on the part of banks and their clients as well as on the part of ministry of finance and central bank officials. It would also imply a change in relationships among the countries in the Union and between Senegal and France.

For the past several years the credit extended by banks in Senegal has been limited by the ceilings imposed by the central bank (Nelson 1991). Under an indirect control system those limits would not apply. Yet under the current institutional arrangements in the UMOA the central bank would not be able to substitute control of the money supply through reserve management for its existing direct controls. Efforts to control reserves could be frustrated by capital flows from other union members or more likely from France. Any difference between interest rates in Senegal and those in France would tend to cause flows of capital into or out of Senegal until the rate differential was eliminated.

That consideration would not prevent Senegal from shifting to indirect monetary control. But, to do so successfully it would have to accept the internationally-determined interest rate and

adapt its fiscal policy in order to generate a level of domestic demand consistent with its inflation target. If, under these circumstances it were then attracting capital it would have to ensure that the use to which the investment is put generates sufficient foreign exchange to service the debt.

The technical problems of the move to indirect control can be solved but the change would involve a significant loss of credit control for Senegal and its central bank agency.

C. Managing Reserve Money in Practice

Practical reserve management requires a continuous monitoring of the money stock and the reserve positions of the banks to provide a basis for deciding when the central bank should take action to change the level of reserve money (Meek 1985; Meulendyke 1989). Once the decision is made the central bank has to be able to operate in the credit market to achieve its reserve objectives without having to consider how its operations will affect individual banks.

In the next sections we consider some of the problems encountered by central banks as they monitor bank reserves and the difficulties of reserve management when short-term credit markets are thin.

a. Monitoring Reserve Money.

The monitoring system must be based on accurate and timely data on the central bank's own balance sheet, the reserve position of major banks, and movements in interest rates together with other indicators of "credit market conditions."

In the absence of any transit and collection items the aggregate amount of reserve money can be calculated from the central bank balance sheet. Reserve money equals the total central bank assets less its nonmonetary liabilities (foreign, government, and "other"). The remaining liabilities - currency and deposits of commercial banks at the central bank - constitute reserve money. To estimate bank reserves, it is also necessary to know the amount of currency issued by the central bank.

Central banks encounter difficulties in the monitoring process on account of expenditure reporting problems, the unwillingness of government to provide access to particular information, and communication delays:

The gaps in expenditure reporting resulted in large part from the fact that reserve monitoring was not a feature of the operation of directed credit systems. Consequently, particular aspects of the existing reporting systems may actually now hinder the reserve management process. For instance, in Ghana and Nigeria,

advances to the government are planned in the budget but are not closely controlled by the ministry of finance or the central bank on a day-to-day basis²⁴. In effect, many government agencies draw on government accounts without any centralized or regular control. Furthermore, there may be a long lag between when government incurs expenditure and when it is reported so that those responsible for reserve management do not have an up-to-date estimate of central bank claims against the government.

In the same way the large volume of transactions involving service on foreign debts and receipts from foreign governments and international agencies may not be sufficiently centralized to provide current statements on the net foreign asset position of the central bank.

The residual "other liabilities less other assets" is often large and covers numerous items. Some are valuation adjustments offsetting changes in the value of the central bank's foreign assets and liabilities as a result of past changes in the exchange rate. Others are the bookkeeping recognition of past losses on the bad debts of failed state enterprises absorbed by the central bank. These "in-house" items should not create any serious estimation problems. Some items in the "other" category represent the central bank's ordinary current liabilities. But in some cases various special arrangements with government or government agencies e.g. some military transactions, are charged to special accounts summarized in the "other" category on the central bank balance sheet. Finally, of course, the effect of the central bank's own profit and loss account must be reflected in changes in the net worth account.

All of the items appearing on the central bank's balance sheet should, of course, be known to the senior management. It appears, however, that the staff members charged with the task of estimating the bank reserve position are not always fully informed as to the nature of all of the items included in the central bank accounts. If they are to perform their tasks properly senior management will have to work out a system which provides the information necessary for reserve management in timely fashion without revealing information considered confidential by the government.

Most of the difficulties noted above can be overcome by reorganizing the central bank's internal accounting system for the specific purpose of reserve control. To do that it will first be necessary that the bank staff have a clear rationale for the changes that will be needed and that there is enough staff to assist in required changes in accounting procedures and to use them effectively in monitoring bank reserve positions.

The research departments of all the central banks in the study countries are working on the reserve monitoring problem. Some

staff expansion may be required if they are to do the monitoring job properly without neglecting their other tasks.

The task of providing data on the reserve position of the banks is complicated by communication and data processing problems in a number of ways.

The banks in the larger countries have widespread branch systems. Even with the aid of regional central bank branches the check clearing process is slow and there are long lags in the collection and transmission of other data. Some of the difficulty arises from the limited capacity of the communications system. Those delays reflect a shortage of modern data processing equipment as well as the limited number of properly trained staff. A substantial investment in communications and data processing equipment will be required to provide complete and timely data. Given the many other needs for capital and training in the five countries it will take some time before they can achieve a really satisfactory reporting system.

Nevertheless, it is not necessary to have a perfect information system to achieve effective reserve control. In all the study countries a high proportion of bank activity takes place in one or two cities. Communications problems should not be a major problem for the banks and branches in those cities, although data processing may be. A system of partial reporting could speed up the assembly and transmission of data from the more distant points without requiring a large investment in communications equipment. Delays in processing within the branches of commercial banks will still pose problems in obtaining accurate data on reserve positions of the banks.

Central bank officials in the countries we studied are aware that they have problems in obtaining timely data for reserve management and they should be able to make substantial improvements over the next two years or so. In the meantime they will have to be guided in their reserve management operations by data which have some evident deficiencies. However, if they supplement their estimates of the reserve positions by a continuous effort to keep in touch with market developments, the errors made in monthly adjustments of the stock of reserve money should not cause major difficulties. Occasional special corrective actions will be needed in addition to the regular reserve control measures.

b. Implementation

Once a plan for changes in the amount of reserve money is determined it should be carried out through regular transactions between the central bank and the government, or the central bank and commercial banks or other private sector investors. In effect, the task consists of a basic process for providing for

the normal growth in the volume of reserve money (associated with the expansion of the economy) and supplementary procedures for making smaller periodic corrections. The nature of the required actions may depend on the size of the government's deficit and on changes in the balance of payments.

None of the study countries has a well-developed secondary market in short term securities. All except Senegal have been experimenting with treasury bill auctions. Only Nigeria has a significant interbank market.

The limited development of these markets results from the ceiling system coupled with a chronic oversupply of reserves. More effective markets can be expected to develop when banks are allowed to compete for business on both sides of the market and when excess reserves have been largely removed from the system. Even so, the development of secondary short-term security markets and interbank markets will depend on the operation of the discount window and the conduct of the treasury bill auction. Unlimited access to the discount window without penalty inhibits the growth of secondary markets and interbank markets. Treasury bill market growth will be limited if banks fear that the central bank is rigging the auction in any way.

While it will take some time to develop competitive short term markets it will still be possible to make use of treasury bill auctions in managing the supply of reserve money. The Gambia has had a treasury bill tender system for several years. Several parastatal firms, the three commercial banks, and some individuals participate in the fortnightly tender and there is now a substantial stock of bills outstanding. Beginning in September 1990 the Central Bank of The Gambia (CBG) began using the bill tender in a program of reserve control. For some time the government budget (including grant receipts) has been close to balance and there is also a balance of payments surplus.

The increase in The Gambia's net foreign assets provides more reserve money than is required to support the money supply targets agreed to with the IMF. Enough treasury bills are tendered to absorb these excess reserves. The proceeds are credited to the government's deposit account so that net credit to government declines. The procedure has worked quite well though the government has borne a considerable budgetary cost²⁵.

When it becomes necessary for the CBG to inject reserve money into the market it can do so simply by tendering fewer than the amount of bills which are maturing. Still larger amounts could be put into the market by buying bills and debiting the government's deposit account.

The success of the Gambian system has depended on the willingness of the government to pay the full cost of absorbing excess

reserves by sales of bills over a considerable period. Until that was done, the CBG could not have issued the amount of bills needed to absorb the reserves at market-clearing rates. The yield required to induce banks to buy bills has been equal to the opportunity cost of alternative loans less an allowance for the differential credit risk and liquidity premium provided by the bills. As the number of participants has increased and the volume of bills expanded, the central bank has been able to operate on both sides of the account.

Although the Gambian indirect control system has worked well so far, largely due to the operation of the bill tender, it has not been tested under unstable conditions. One has to imagine how it will function in the event of an adverse change in the balance of payments, in import prices, or in fiscal policy. In particular we do not know:

- how the participants in the bill auction will react to circumstances in which a sharp rise in the bill rate will be required to clear the auction;
- whether banks will keep loan and deposit rates in line with rising bill rates or will adjust credit standards and informal rationing;
- whether and in what circumstances rising interest rates will induce Gambians to repatriate funds they are holding abroad;
- what problems of bankruptcy and production cutbacks due to adverse changes in the cost and availability of working capital may develop;
- whether the supervisory system can provide reasonable assurance that most banks will be able to experience difficulties without becoming insolvent;
- what political responses may be triggered by the effects of sharply higher interest rates;
- whether the central bank and ministry of finance will formulate fiscal and monetary policies which use the potential of fiscal policy for rational resource allocation without forcing all of the adjustment onto the monetary system.

The Gambia has shifted to an indirect control system as part of a strategy of liberalization embodied in its economic recovery program. It has maintained and demonstrated its commitment to macroeconomic stability for several years. That commitment together with the well-established cooperation between the central bank and the financial community reduces the risks in the move to indirect controls. The risk to The Gambia, however, is not so much that the new system will increase instability but that adverse conditions will prompt a return to direct controls, either formally, or through the behind-the-scenes direction of the central bank. Such a development would cause a major setback in the country's financial development, primarily because of

the adverse impact it would have on confidence (section IX).

Some other countries have tried bill auctions but have been unable to sell the scheduled amount because their governments have been unwilling to pay a high enough interest rate.

The tender (or auction) technique seems to be the most feasible reserve control system for countries which have not yet developed strong secondary markets in short-term securities. Its role will depend in part on the other factors affecting the volume of reserve money and on the initial reserve position. When there are large amounts of excess reserves outstanding treasury bills can be sold to remove them. As the economy grows bills can be bought back (or allowed to mature) to provide reserve money as needed. Another option may be to begin with a high reserve requirement and reduce it as the money stock grows. The first approach is costly to the government; the second is costly to the banks.

When those alternatives are not feasible it will appear attractive to provide reserves by increasing central bank credit to the government. In principle the government can sell securities required to finance its deficit. The securities can be sold at auction or by tender and the central bank can take up enough of each issue to meet its objective for the growth of reserve money. However, the use of central bank operations in securities for treasury finance as well as for reserve control is likely to undermine the reserve control system. If central bank credit to the government is to be used to create reserve money that operation should be separated from other sales of securities to the banks and public. An announced program of purchases of securities for reserve creation purposes by the central bank could supply the basic supply of reserves. The amounts so purchased would vary from week to week but would be announced. Any remaining government security sales would be made to the public with no participation by the central bank.

If as would be desirable in most SSA countries domestically financed deficits were kept small the central bank could generate reserves by operating in a market for the securities of commercial banks and perhaps in its own obligations in the manner of Bank Indonesia.

A further consideration arises in establishing the relation between the discount window and the treasury bill market. It is clearly necessary to have a lender of last resort available so that banks can meet their reserve requirements when unexpected shifts in deposits occur. Banks find treasury bills much more attractive if they know that they can be rediscounted on favorable terms and without limit. However, a wide open discount window inhibits the growth of a secondary market for treasury securities and thereby reduces their attractiveness to those who

do not have direct access to the discount window. Banks should have a well-defined but limited right to use the discount window at a rate related to recent market or auction rates so that ordinary day-to-day reserve adjustments can be made without difficulty. But, there should be a penalty rate for any borrowing in excess of some percentage of required reserves. Banks would then find it more attractive to use interbank trades to adjust reserves on a daily basis and to develop a secondary security market.

c. Short-Term Adjustments

As they attempt to carry out the monetary program, the central bank staff will have to deal with two sets of deviations.

First, the attempt to keep the money supply on the path indicated by the program will be complicated by changes in the multiplier and changes in the uncontrollable factors affecting the supply of reserve money. Second, deviations from the projections for prices, outputs, interest rates, and exchange rates may occur even if the central bank succeeds in keeping money supply growth on the programmed path. Those deviations may be caused by unexpected movements in exports or government expenditures, or they may originate in private sector decisions with respect to savings, investment, import demand, or the demand for money. Our discussion of the problems of forecasting movements in GDP indicate that very significant prediction errors will occur with some frequency.

Deviations of the first kind can be offset fairly readily by adjustments in the size of the bill auction. Deviations in money supply need not become large unless there are very long lags in data reporting. Deviations of the second kind pose questions about the circumstances in which it is appropriate to change the targets for monetary growth. While those questions might be raised with respect to the targets of a credit ceiling program, they assume more importance under an indirect control regime because deviations from the expectations underlying a monetary growth program may imply unacceptable volatility in interest rates.

There are times when deviations from the projections underlying the original program justify a change in program. Ad hoc responses to current events can be avoided if the annual program includes some specification of the circumstances under which a program change would be appropriate. Those circumstances will include some recognizable changes in the prospects for export revenues, in foreign aid receipts, in import prices, or in government expenditures. Other developments in the domestic economy will be reported only with a considerable lag. It is important, therefore, for the central bank to organize its information system and monitoring procedures so that the need to

adjust the program is facilitated.

VII. Transmission Mechanism

The transmission mechanism is defined as the "various channels whereby monetary policy may influence expenditure decisions"²⁶. The monetary program provides for a specified expansion of bank liabilities and bank assets. That expansion is based on an estimate of money demand which is consistent with a target level of GDP. The estimate of money demand even if derived from a simple money/GDP ratio implicitly reflects the expenditure, saving, and lending behavior of households, businesses, and government corresponding with the target level of GDP.

Central bank actions influence expenditures most immediately by determining the availability of bank credit either directly through loan ceilings or indirectly through the central bank's control of the volume of reserve money. Banks then allocate loans among their customers by changing interest rates and/or credit standards. Under indirect control systems banks can compete for funds in the interbank and other short-term security markets and by changing their interest rates they may compete for deposits. Their actions influence other institutions and markets and the value of assets. All those changes in turn affect the expenditure decisions of households and businesses.

i. Money vs. Credit²⁷

Before considering the details of the transmission process it may be worthwhile to comment on the different approaches to this area of monetary analysis. Most expositions of the linkage between central bank operations and changes in nominal GDP are expressed in terms of the influence of money supply on expenditures. That is obviously so in the "quantity theory" expositions which assume that the demand for money is proportional to income (Friedman 1974; Kaufman 1989:584-589). Under such an arrangement, the central bank determines income when it provides a given money stock.

In more complex models the demand for money is seen as depending upon interest rates as well as on nominal income. For any given income the interest rates must equate the demand for money to the supply determined by the central bank. Deposit and money market rates are linked directly to money demand. They are also related to other interest rates, e.g. on long-term bonds, and to asset values. Finally, expenditures on investment and consumption are thought to be related to interest rates and asset values. The equilibrium levels of income, interest rates, and asset values are then determined simultaneously (Goodhart 1989:Ch.IV).

It is well known that the generalizations about the behavior of

households and businesses underlying the models just outlined can also be expressed in terms of the balance between the supplies and demands for bank credit. That was demonstrated long ago in the discussions of the "liquidity preference" and "loanable funds" theories. It also underlies the "flow-of-funds" models (Bosworth and Duesenberry 1973). Usually the money models are more compact than the flow-of-funds models but they owe their compactness to some strong assumptions about the competitiveness and integration of the different kinds of security markets²⁸. In particular they do not provide any analysis of credit rationing or segregated markets. For that reason a greater emphasis on credit flows seems appropriate in models applied to developing countries. Moreover, much of the analysis undertaken by the IMF is cast in terms of credit flows instead of the supply and demand for money (IMF 1981). Accordingly, the following sections emphasize credit flows but not to the exclusion of the links between money and interest rates and expenditure.

ii. Changes in the Transmission Mechanism

It is important to recognize that the shift to indirect controls involves a radical change not only in the methods of controlling the volume of money and credit but in the way in which that control affects expenditure prices and production²⁹.

Credit ceilings seem to operate in a very simple way. By controlling the volume and sometimes the allocation of bank credit, the ceilings have a direct effect on the volume of expenditures financed with bank credit. That is literally true to the extent that credit regulations are enforced, but the story does not end there. Direct controls have numerous indirect effects which are seldom readily measured. Borrowers rationed out of the bank loan market may compete for funds in informal markets. Savers may lend in those markets rather than accept the low return on bank deposits. Both lenders and borrowers may resort to foreign markets.

In spite of those complications direct controls, if they are enforced, operate in the intended direction. That must be so if only because so much of their effect usually results from limits applied to the growth of credit to the government and to the state enterprises.

A shift to indirect controls will change the transmission mechanism in several ways. It will imply a much greater role for interest rates in allocating credit and in balancing the overall supply and demand for credit.

It should increase the importance of competitive forces in loan and deposit markets. While that will be beneficial in the long run, there may be some short-term difficulties created by interest rate volatility and threats to bank solvency.

The move to indirect control may also cause fundamental changes in the links between domestic and international markets. Instead of driving some lenders and borrowers offshore it will tend to link the whole domestic market more closely to international markets.

Finally, we must recognize that our discussion of the transmission mechanism under indirect controls necessarily reflects the experience of countries outside SSA. While we expect that many of the same forces are operating on the financial systems in SSA as elsewhere, some potential surprises are possible.

iii. Indirect Control

Under an indirect monetary control system, the "transmission" of the effects of the monetary program involves an interaction between the supply of bank credit provided by the program and the demand for bank credit from private sector borrowers. Their demand reflects their investment opportunities and their need for working capital. Supply and demand for bank loans can be brought into balance by interest rate changes and changes in credit standards.

Banks stand in the middle of the loan market competing with one another for deposits on the one side and competing for loan business on other. Competition for loan business should, in principle, set interest rates which allocate available funds to those businesses which can earn the highest (risk adjusted) return on capital.

Banks compete for deposits in order to finance loans. The total amount of deposits is controlled by the central bank's reserve operations, but individual banks can try to increase their share by offering higher rates. Their deposit rate offers should, in a competitive market, reflect the prospective return on assets after allowance for operating costs and a return to capital commensurate with the risks in the portfolio and their leverage position.

Interbank and short term securities markets play an important role in the competitive process. Banks use those markets to adjust their reserve positions from day to day. Banks with excess demand for loan funds may become net borrowers in these markets while banks with deposits in excess of loan demands may be regular net suppliers of funds. The rates established in those markets govern the marginal cost of funds to all banks so that regardless of their individual market shares in deposit and loan markets all banks will face the same marginal cost of funds and the same risk-free investment opportunity.

In practice, however, variations in deposit and loan interest

rates are unlikely fully to reflect the rate variations in short term markets. Banks faced with excess demands for loans may prefer to ration credit rather than raise loan and deposit rates. Indeed, it is widely recognized that variations in "credit availability" usually play an important role in balancing short run variations in supply and demand.

iv. Causes of Interest Rate Variation.

Interest rate variations will occur for two quite different reasons. On the one hand the non-monetary forces which determine nominal expenditure may vary while the growth path of the money supply does not. If the income velocity of money (GDP/M2) is stable, interest rates will have to rise to offset the effects of increased government expenditures, stronger investment demand, increased export earnings or other nonmonetary factors which raise nominal expenditures. On the other hand, changes in demand for money relative to GDP will tend to cause variations in interest rates even when the non-monetary factors in the system are not varying. The central bank can, of course, change the money supply to match the change in demand when that seems appropriate.

In either case the movement of interest rates results from an interaction between the supply of and demand for loan funds. The central bank can control the supply but the demand varies with all the factors affecting expenditure decisions. To put it another way, interest rates may sometimes change because central bank actions reduce the supply of funds while the demand remains unchanged but interest rates may also rise because demand factors change while the supply of bank reserves remains fixed. Some aspects of those interactions are discussed in the following sections.

A. Overview of the Transmission Mechanism

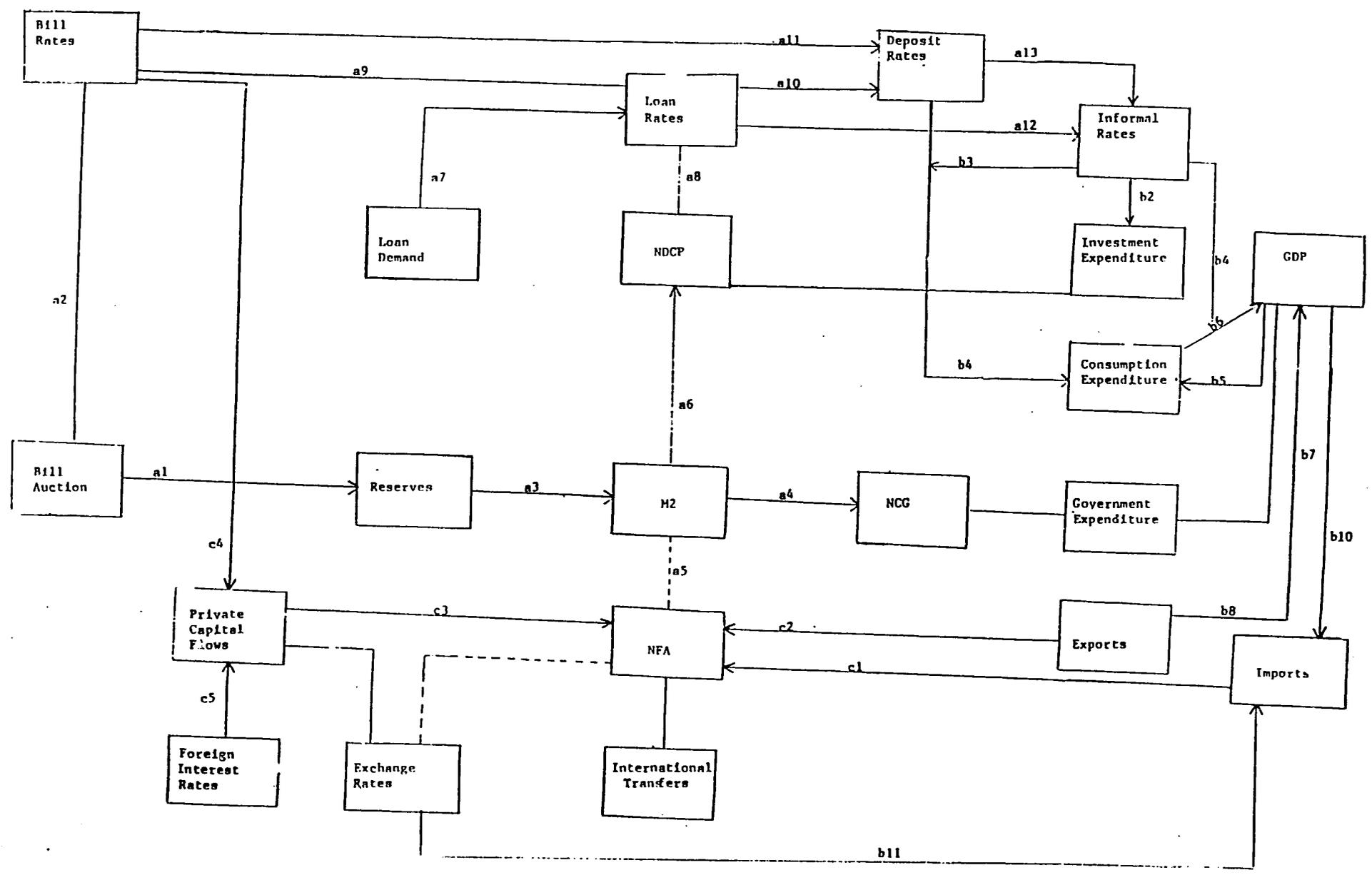
Diagram 1 is an overview of the major links among financial market participants. It also shows some of the channels through which financial variables influence nominal GDP. Finally, it indicates the connections between domestic finance, international trade and capital flows, and the exchange rate.

Overall, the diagram can best be understood by considering three major sections then linking them together.

The upper left-hand section of the diagram shows the financial interactions which determine interest rates and the volume of credit. First, the central bank controls the volume of reserve money through the bill auction (line a1). The bill rate is determined at the same time (line a2). The bill rate also reflects the influence of loan and deposit rates since loans represent alternative uses for bank funds while deposit rates

MONETARY TRANSMISSION

DIAGRAM 1



62A

represent the cost of alternative source of funds. To avoid cluttering the diagram those links are not shown. The supply of reserve money and the money multiplier then determine the amount of money plus quasi-money (line a3). The money supply is matched on the asset side of bank balance sheets by:

1. Net Credit to the Government - NCG
2. Net Foreign Assets - NFA and
3. Net Domestic Credit to the private sector - NDCP.

Their links to the money supply are shown by lines a4, a5, and a6.

Line a5 is dotted to indicate that the change in money supply resulting from a change in NFA depends on whether the central bank regards money or domestic credit as its main target. If the central bank allows money to adjust for deviations from the estimate of NFA used for monetary programming a given total of domestic credit is divided between the government and the private sector.

Lines a7, a8, and a9 indicate that the supply and demand for loans interact with one another and the bill rate to determine bank loan rates. Loan demand is, of course, influenced by the level of GDP as well as by other factors affecting investment opportunities. The loan rate also interacts with the bill rate to determine the deposit rate (lines a10 and a11). Finally, the loan and deposit rates influence rates in the informal markets (lines a12 and a13)

A second set of interactions relates the financial outcomes just discussed to expenditures on goods and services at home and abroad. First, the supply of credit for private sector loans NDCP is a major determinant of private sector investment (line b1). Note that the amount of loans available is determined by the monetary program. The formal credit markets not only determine the interest rate on loans but as already noted the formal sector deposit and loan rates influence the interest rates in informal markets which, in turn, have an impact on investment (line b2).

The ratio of savings to income is a function of informal market rates as well as by bank deposit rates (lines b3 and b4). For given the tax and savings rates, GDP determines consumer expenditure which, in turn, is a component of GDP (lines b5 and b6). Exports and government expenditure are also components of GDP (b7 and b8). Finally, imports are determined by the exchange rate and GDP (lines b10 and b11).

Taking all these points together, nominal GDP is determined by the interaction of government expenditures, private investment and exports. Credit enters directly as a source of finance for government expenditure and private investment. It enters

indirectly through the effect of interest rates, formal and informal, on private investment and saving decisions. As we see below credit may also influence imports through its impact on capital flows and the exchange rate.

The final part of the diagram give the connections between the domestic economy and world markets. Lines c1 and c2 indicate the flows of funds generated by imports and exports. NFA tend to increase with the value of exports and decrease with the value of imports. The direct effect of official capital inflows and unrequited transfers from abroad is to increase net foreign assets (line c3). At the same time, however, the local currency proceeds of those inflows is used to finance government expenditures which in turn raises the demand for imports. Private capital flows are influenced by the bill rate and by foreign interest rates and by the exchange rate (lines c4 and c5).

If the central bank maintains a fixed or predetermined level of net foreign assets the net inflow of capital, official and unofficial, must balance the current account (after grants). For given foreign interest rates, the adjustment will occur through changes in domestic interest rates and the exchange rate. In the short run the exchange rate influences capital flows by the prospect of gain or loss from an expected future change in the exchange rate. In the longer run, of course, the exchange rate must move to reduce trade imbalances to a sustainable level.

B. The Transmission of Policy in Practice

In this section we consider some examples of how the financial system responds to changes in saving, investment, and fiscal policy. We first consider the adjustments which take place in response to a monetary program when the central bank has correctly estimated the demand for money consistent with its nominal income target. We begin with a base-line situation in which the demand for credit happens to be in line with the supply provided by the monetary program so that no change in credit terms or interest rates is required. We then examine the adjustments that would be required if the demand were higher than in the initial example. Later we consider what happens when some of the assumptions underlying the monetary program prove to be wrong.

Consider first a monetary program which is intended to provide the financial basis for a continued expansion.

i. Accommodating Balanced Growth

We may suppose that the macroeconomic projection indicates that for the coming year it will be possible to have:

- continued real GDP growth in line with potential output
- a continued moderate rate of inflation
- balance of payments equilibrium with the deficit on goods and services balanced by capital inflows, grants and remittances so that no loss of exchange reserves or exceptional financing is required.

Through the course of the forecast year the central bank has to provide enough reserve money to meet the projected currency demand and the reserves required for the bank deposit component of the projected growth of money demand.

What happens in the credit markets will then depend on the size of the PSBR and the strength of the private demand for loans to finance investment expenditures. If the demands by borrowers who meet the initial credit standards and are willing to pay the interest rates ruling at the start of the period just balance the supply of bank loans, the monetary program works out smoothly. Monetary policy, as reflected in the monetary program, is "transmitted" to the real economy through the chain which begins with the reserves provided by the central bank. The following sections consider the adjustments in central bank action and in the financial markets to various kinds of imbalances between the supply and demand for credit.

ii. Higher Investment Demand

Suppose that with everything else the same there is more demand for credit for private investment than in the previous case. With the same monetary program as before there will be excess demand for loans. The imbalance in the market for bank loans will lead to changes in the credit standards and interest rate policy of individual banks and changes in the interest rates in the open markets. Banks faced with excess demand for loans tighten their credit standards, sell short-term securities and, if possible, borrow in the interbank market. Banks which happen to have surplus funds will act in the opposite way.

Because there is excess demand for loans, interbank and other short-term interest rates will rise. Banks will raise the rates charged on loans and deposits. If the supply of reserves continues as indicated by the monetary program the amount of loans will not expand. The only question is how much of the adjustment to the supply-demand gap will be made through rationing (changing credit standards) and how much through the response to changes in interest rates.

Changes of both kinds may also be reflected in the informal markets. Rates in those markets will change in response to changes in the formal market rates. Moreover, borrowers rationed

out of the formal market will seek to borrow in the informal markets. Lending rates there are likely to rise by more than deposit rates at the banks. The increase in bank rates always tends to be attenuated because the marginal cost of added deposits significantly exceeds the average cost and because banks have to consider their relations with their (oligopolistic) competitors. To the extent that some asset holders are prepared to hold informal market claims instead of claims against banks there may be a fall in the M2/GDP ratio. With given M2 growth that will permit a somewhat greater rise in GDP than originally planned. However, the response of money demand to changes in short-run interest rate is generally not large. Most of the adjustment to the imbalance of supply and demand will be made through the response of borrowers to higher interest rates and to rationing.

Those responses will lead to changes in expenditures on goods and services as well as in changes in asset values. If the central bank remains committed to the original monetary program it will hold nominal GDP close to the original target but interest rates will be higher, and credit rationing more severe.

iii. Higher Public Sector Borrowing Requirement

Higher levels of government expenditures or parastatal investment, if not offset by measures to raise revenues, would produce results similar to the situation discussed immediately above. The higher PSBR would "crowd out" other investment through higher interest rates and/or rationing.

iv. Lower Demand for Money

Suppose that all the circumstances are the same as in the base case except that the central bank correctly perceives that the demand for money (at the target GDP level) will be lower. That implies that either households will: save a lower proportion of income than in the base case; or channel a greater share of their savings into direct investment or into investment financed through the informal market. In either case the amount of saving available to finance investment through bank loans will be smaller if the nominal income target is realized. But for the central bank to realize that target credit expansion must be smaller. The central bank will have to provide a smaller increase in reserve money than in the base case. There will be a correspondingly smaller growth of money supply and bank assets. If the government's financial program and private investment demand remain unchanged from the base case, interest rates will have to rise and credit rationing will become more severe. The adjustment to a lower level in monetary saving will be similar to those in the two cases already considered.

It is instructive to consider what would happen if the central

bank failed to adjust to the lower demand for money. For example, suppose that the central bank based its program on the assumption that the ratio of money to income would remain unchanged. It would use the reserve program of the base case until the error was realized some months later. How would the unpredicted change in money demand manifest itself? The public would not, for a time at least, be holding less money. The rate of money supply growth would be controlled in the first instance by the actions of the central bank. Banks would be increasing their total loans to business and government at the same rate as in the base case. But by assumption, some households who would have put savings into bank deposits will be making other arrangements. Some will invest in their own businesses; others will be lending in the informal market to businesses which have plans to invest. Total spending will rise faster than in the base case and in the end saving out of the higher level of income will rise. The decline in the ratio of money to income will result in the higher income and the same amount of money holdings as in the base case.

Once the central bank discovers the change in the money income ratio it can begin to adjust its program to limit the growth of income and eventually bring the level of demand into line with its target.

v. Increased Value of Exports

When, as is often the case, GDP growth is limited by the balance of payments constraint an increase in export earnings permits an increase in domestic absorption without generating serious upward pressure on prices. In those circumstances increased exports pose few problems for the central bank. If government expenditure and tax rates remain unchanged domestic absorption will tend to rise. Imports will also rise but by less than the increase in the value of exports so the current account will improve. Net foreign assets must rise by comparison with the amount expected before exports improve.

However, if the monetary program is stated in terms of money growth the gain in net foreign assets of the banking system would have to be offset by a reduction in the growth of other bank assets -- that is in the amount of bank loans extended to government or business. Indeed, if carried to the extreme, nominal GDP would have to be maintained at the same level regardless of the export level. That would be justified only if the economy's nontradeable sector was under serious constraints.

If on the other hand the monetary program is stated in terms of credit to be extended to the domestic sector the credit program would be unchanged. Domestic absorption and GDP would rise as would imports but there would be an increase in net foreign assets.

C. The Role of Competition

Throughout our discussion of the transmission mechanism we have assumed that there are competitive money markets and that banks compete with one another for deposit and loan business. In that case interest rates play an important role in bringing about the adjustment required by changing circumstances. Interest rates generally provide appropriate signals to guide the response of savers and investors. However, in financial markets as well as in the markets for goods and services the generally benign results expected from market processes are fully realized only when there is effective competition.

Regulation of loan and deposit rates and the allocation of credit to specific sectors or through banks by bank ceilings has caused serious economic inefficiency and waste. Deregulation and the use of indirect controls are expected to remove the distortions induced by over-regulation of the financial system. Nonetheless, an alternative system will not be better merely because it is different (Eisenbas 1981).

When the alternative is a system characterized by monopoly elements, deregulation of interest rates may lead to wide spreads between deposit and loan rates, weak links between the returns on investment and the returns available to savers, "safety first" banking, and market sharing. The signals generated by changes in the savings-investment balance or in the relative returns on different kinds of investment will be weak in the markets for deposits and loans. The problems of establishing effective competition in those markets and in the short-term securities markets are discussed below in the section on financial structure (section VIII.D).

VIII. Reforming the Financial System

The successful implementation of a monetary program will depend on viable financial institutions and their ability to compete in the markets through which the changes in monetary aggregates are being transmitted. These concerns focus attention on the need for financial reform, a process which aims to rationalize financial procedures and reorganize and restructure financial institutions and associated markets.

The following sections discuss the background to financial reform in the countries we have studied and then turn to several specific issues, financial rehabilitation, improving financial markets, and increasing financial competition.

A. Financial Reform

The financial systems of many countries in SSA (World Bank 1989:77-83) and all of the countries in this study have been under stress for most of the last two decades. Indeed, Ghana was in financial difficulties in the late 1960s. The data in Tables 1 and 2 above confirm this. The growth of real GDP has been low and often negative yet the rates of increase of the money supply and domestic credit have been exceedingly high. The result has been high and (often) accelerating inflation, the accumulation of insupportable levels of foreign debt, and the diversion of resources out of locally denominated financial assets.

Many of these developments can be directly traced to government controls over the financial system. A major consequence has been poor bank performance, particularly the state-owned banks. In Nigeria, several state-owned banks have been under supervisory restraint (NDIC 1990). In Malawi, the loan portfolios of both the Commercial and National banks deteriorated because of the non-performance of "priority" sector loans which the banks had made under government pressure (Bolnick 1990). The state-owned bank in The Gambia, the Gambia Commercial and Development Bank, experienced large losses. The bulk of its non-performing loans were to public enterprises and to borrowers who had government guarantees.

In Ghana, the banking system experienced large losses as a result of the collapse of the economy and the insolvency of the parastatal sector (Younger 1990). Finally, in Senegal there have been several attempts over the last decade to patch up the financial system. The agricultural co-op (ONCAD) collapsed in 1980 with debts of approximately CFA 64.3 billion or \$284.8 million at the 1980 exchange rate of CFA 225.8=\$1 (Nelson 1991)³⁰. Instead of dealing with the problem at the time, the government distributed the debt to other state-owned financial organizations. These subsequently failed and are presently being restructured.

Financial reform has been accorded a greater degree of urgency in The Gambia, Senegal, and Ghana, than in Malawi and Nigeria. In Malawi, for example, the difficulties never threatened the solvency of the two commercial banks. Accordingly, the authorities there have been able to pursue a reform program aimed at strengthening the central bank's role in macroeconomic policy, rationalizing its regulatory powers, and providing a legislative framework for the development of capital markets. With this framework in place -- through the Reserve Bank Act (1989), the Banking Act (1989), and the Capital Markets Development Act (1990) -- the main tasks are to foster the expansion of services provided by the financial system and encourage financial competition.

The authorities in Nigeria have taken several initiatives to strengthen the financial system. The Nigeria Deposit Insurance Corporation (NDIC) was established in 1988 (Ebhodaghe 1990) and the central bank's supervisory capacity has been enhanced through additional training. As a means of promoting competition, there has been a major expansion in the number of commercial and merchant banks (NDIC 1990; BFA 1990)³¹. The progressive liberalization of the exchange rate system has led to a major increase in the number of registered bureaux de change.

Many banks are "distressed" and the potential losses are large. For example, approximately 41% of all bank loans and advances in 1989 were "classified" (NDIC 1990:Section 2). For the whole banking system this represented 280% of shareholders' funds; for the "distressed banks" the classified assets were 1440% of shareholders' funds. For the past several years, the banking system has been buoyed by monetary expansion and high inflation. If, as recent events suggest, the government begins to reduce its deficit sharply and slow down the rate of inflation, the whole banking system will be placed under serious pressure³².

Financial reform was a key element of The Gambia's recovery program. Numerous measures have been implemented and others are still in process. The most significant change was the sharp reduction in the PSBR. This was achieved in several ways. The government reduced its deficit by controlling expenditures and increasing revenues through tax reform and reductions in tax fraud. Price liberalization enabled most parastatals to cover their costs. In fact, some parastatals -- telecommunications, public transport, and port and ferry operations -- have become highly profitable helping to reduce the demand for bank credit by public enterprises. The liberalization of interest rates supported the development of a T Bill market. Finally, with donor support a program to restructure the key financial institutions was introduced.

In Senegal, financial reform has involved a number of steps. Several defunct financial institutions are now being reorganized. The government is endeavoring to cut its deficit and its interlocking arrears with the parastatal enterprises are being monitored and reduced. The government is also not providing any more loan guarantees (Nelson 1991).

Finally, financial reform in Ghana has been a major preoccupation for the last several years. Initially, the basic problem was stabilization. This required some control over the budget deficit. Since then, a process for unifying the parallel and official foreign exchange markets has been introduced. Numerous bureaux de change have been established. An organization to remove the non-performing debts from the books of the commercial banks has been set up. And interest rates have been allowed to increase (but not to market clearing levels).

Financial reform in Senegal, The Gambia, and Ghana has been inordinately expensive, both financially and in terms of the skill personnel and time required. Major efforts are being made to ensure that such a situation does not recur. Because it is now widely recognized that the financial problems of the state-owned enterprises have largely resulted from poor management, unsound financial practices, and political interference, a common theme has been to place their operations on a "commercial basis." "Performance contracts" between the government and the state-owned enterprise are now common in the restructuring process. These contracts will oblige the SOEs to compete within the restructured financial setting or go out of business. The case for the "compete or close" approach is even stronger if the government actually sells its shares in the banks³³.

From the nature and extent of the financial reforms undertaken so far, it is clear that none of the governments or central banks in the countries we studied had the capacity to promote financial development. The evidence, in fact, is that controls over interest rates, credit allocation, and the promotion of specialized "development" institutions (such as development banks) created a series of non-market failures which undermined financial development. (Section C below discusses this point in detail.) Furthermore, poor macroeconomic management associated with the respective governments' unwillingness to deal with the public sector deficits and the overvalued exchange rates, placed additional pressure on the financial system.

Each government can explain why its financial systems has not performed well. The list of "causes" is extensive -- drought, oil shocks, rising real interest rates on external debt, fluctuating commodity prices, protectionism in the developed countries, erratic foreign aid flows, the colonial legacy, and so on. None, however, adequately explains why each government of its own volition borrowed excessively (both locally and abroad) during the 1980s.

B. Financial Rehabilitation

The objective of financial rehabilitation is to restructure the organizations involved so that they have higher levels of capital, qualified staff who actively monitor their own operations, and a system of risk accounting which is subject to regular outside supervision (Corrigan 1990; Mikadashi 1990:Ch.12; Pozdena 1991). In formulating and implementing such a program at least four issues arise: the timing of the rehabilitation relative to other aspects of economic reform; raising the resources needed; strengthening the capacity of the staff involved; and policy changes needed to complement the effort.

i. Timing of Rehabilitation

Ideally, the financial rehabilitation should begin as soon as possible. A major objective of financial reform is to reduce the internal and external imbalances and to minimize the losses associated with the continued operation of insolvent banks. Some banks must be closed or merged; others need to be recapitalized after taking full account of their losses.

In practice, the rehabilitation effort has usually been delayed. There are no instances we could find where delay actually reduced the costs of rehabilitation³⁴. A principal reason for delay is that the governments concerned are under intense pressure to contain the growth of their expenditure. The central government in Ghana has been unable to raise the finance needed while in Nigeria, the rehabilitation of the state-owned banks is being held up while the state governments press the federal government to provide more resources.

Another reason for the delay, however, is strategic. Financial reform has been deflected by individuals and firms who are heavily indebted to the banks, those who continue to have special access to loans and foreign exchange, and senior bank officials who wish to disguise the full extent of the financial losses. These delays can be considerable. Purposeful measures to deal with the GCDB in The Gambia were "put off" for almost four years by various delaying tactics³⁵.

Because some delay will occur, the central bank and/or ministry of finance should attempt to devise a scheme whereby the activities of defunct institutions are prevented from doing any more damage to the financial system. Such a strategy was adopted in The Gambia when the ministry of finance monitored the lending by GCDB to the Cooperatives during 1986 and 1987. By 1988, GCDB was brought under donor-imposed performance guidelines which prevented it from continuing to fund the Cooperatives. In Ghana, the banks have been operating under the equivalent of "cease and desist" orders. New loans can only be made as old loans are retired (Younger 1990).

Such a strategy, however, has drawbacks primarily because it may not be possible to prevent any more damage³⁶. Moreover, it increases the time needed to reduce the financial imbalances within the economy.

ii. Paying for Financial Rehabilitation

Numerous financial institutions in SSA have become insolvent and large costs have been incurred. The non-performing loans which produced the insolvencies resulted in the loss of real resources at the time they were originally disbursed. Those losses cannot

be recouped. Rather, the issue now is to determine how the depositors' claims against these insolvent financial institutions will influence the ultimate distribution of the losses.

A principal objective of financial rehabilitation is to avoid adding to the losses which have already occurred. Consequently, the rehabilitation exercise should be arranged in such a way as to cover the financial costs without distorting economic behavior unnecessarily.

The financial costs of rehabilitation can be met in several ways:

- . depositors/creditors absorb the loss;
- . government transfer from the budget;
- . government borrowing from the central bank and/or the non-bank public;
- . counterpart funds of donor balance of payments support;
- . direct payments by the donor community.

Forcing depositors and/or creditors to absorb the losses from failed financial institutions is not common in developing countries for a number of reasons. First, most governments implicitly guarantee all deposits³⁷. Second, the banks which are in the deepest trouble are almost invariably state-owned. Moreover, their largest depositors are state-owned entities and the largest creditor is usually the central bank. Default would simply push the problem back one level. The recent effort in Senegal to reconstruct five state-owned banks is an example. The principal depositors of these banks were public enterprises; and their principal creditor was the BCEAO which had refinanced many of their loans.

Third, default of state-owned banks would reflect adversely on the government. It may also lead to unwelcome probing which in many cases would reveal mismanagement and fraud on the part of government officials and their associates. And fourth, having creditors/depositors absorb the loss would be deflationary. This effect could be compounded if the losses were to cascade.

Budget transfers to pay for financial rehabilitation can be a major burden particularly when there are pressures to increase expenditures on other items. For governments which have strict expenditure limits, the opportunity costs of rehabilitation are immediate and explicit.

Some charges against the budget are legitimate and should be met. These include additional capital contributions (if the government is a shareholder); payments for technical assistance involved in the reorganization; and the costs of honoring government guarantees. Although these charges are often high, the government should attempt to meet them especially if it is

seeking to re-establish financial discipline. Financial reform will not succeed if the government itself is hesitant about the need for accountability. The decision by the Government of Senegal to reschedule the ONCAD debt with the BCEAO and the Gambia Government's decision to establish the managed fund should be seen as serious attempts by these governments to re-establish their credibility as guarantors and shareholders.

Government borrowing to pay for the rehabilitation shifts the cost to the taxpayers, who will have to service the debt. Ghana has funded some of its rehabilitation program in this way³⁸. The problem is that the additional borrowing can add pressure on an already overextended capital market. Since the depositors and bank creditors implicitly believed their assets to be safe, the pressure will be felt when the institutions attempt to shift out of government debt into cash or private loans.

Counterpart funds are generated when the donors provide balance of payments support (in cash or kind) which is then sold (the cash to the central bank, the commodities to the public). Typically, governments set these funds aside as a means of reducing pressure on domestic prices and the exchange rate³⁹.

Counterpart funds provide a convenient means of straightening out the books through inter-agency transfers. A common example arises when government-owned organizations are heavily indebted to the central bank (through overdrafts or refinancing). The transfer is effected by debiting government's account at the central bank and crediting organization's account. While the monetary effect of such a transfer washes out, the financial impact is positive because the transfers often leave the organization involved with positive net worth⁴⁰.

The government can also use counterpart funds to retire any non-performing private debt which is held by the financial institutions. In this case there is a positive monetary effect. Indeed, the use of counterpart funds is the same as if the central bank had made an advance to the government for the rehabilitation exercise.

Donor assistance is an important source of funds for financial rehabilitation. It is popular with recipient governments because it eases pressure on their budgets, avoids additional domestic borrowing, and saves the political embarrassment of closing the institutions involved. The World Bank is supporting financial reconstruction in Senegal, The Gambia, and Ghana. USAID is supporting the effort in Senegal and The Gambia. The French Caisse Centrale is similarly engaged in Senegal.

Such assistance often creates the wrong incentives, however. Both the governments and managements of the restructured organizations may believe that since the donors have bailed them

out once, they would find it difficult to refuse a second bail-out, or even a third..... Donors, therefore, usually make their support conditional on the appointment of new management and improvements in capacity of the organization's staff.

iii. Building Staff Capacity

If financial institutions are restructured, a major effort will be needed to prevent them from relapsing into insolvency. This will require fundamental changes in the organization, operating procedures, and staff of the banks themselves. Above all, the new managements which are to operate the institutions must be competent, honest, and free of government interference.

No institution can contribute to financial reform and financial development if its activities are motivated by goals other than generating a financial surplus. A clear lesson from countries of SSA over the last two decades is that the financial institutions are not an effective, efficient, or sustainable means of making grants, subsidizing "priority" sectors, promoting political objectives, or directing resources towards particular groups or individuals. Such activities, which have characterized the financial sectors of The Gambia, Senegal, Nigeria, and Ghana, undermine the integrity of the whole financial system⁴¹.

Financial rehabilitation should only proceed if clear goals about the future operations of each institution have been established. The most important goal is that the restructured institution should operate as a business (Youngjohns 1982). If this is not the intention, the institution should be closed to prevent further losses. There are far more efficient, sustainable ways of subsidizing specific sectors and activities. Moreover, without clear market-oriented standards by which to judge the performance of the financial institution and its management, the government and (possibly) donors will face yet another round of rehabilitation in the (not-too-distant) future.

For the restructured institution to operate on a commercial basis, staff quality is an over-riding factor⁴². Specific attention should be given to the ability of the staff to evaluate loan proposals, plan the portfolio, and manage the interest rate, foreign exchange, and loan concentration risks to which the institution is exposed. Provision for accurate and timely accounts is essential; costs have to be controlled; and the institution has to adhere to laws and regulations. Conflicts of interest have to be avoided. Finally, the institution has to ensure that its financial instruments are secure, liquid, and provide attractive (risk-adjusted) returns which allow their customers to efficiently transfer risk and transform the maturity structure of their portfolios.

Finding qualified financial managers and training the staff

needed will not be easy. For this purpose it may be useful to seek technical assistance from the donors or to establish a system of management contracts with internationally reputable firms. Nigeria has had a constructive relationship with FDIC consultants who have been training the trainers of local bank supervisors. French technical assistance has been prominent in the training of bank staff in Senegal. And, in The Gambia, a condition for donor support to the GCDB was the replacement of local managers by a team of expatriates.

iv. Complementary Actions

A major concern in formulating a program of financial rehabilitation is to ensure that the measures should be supported by other government activities and policies. Common problems are that the legal system makes the enforcement of contracts exceedingly difficult; government-mandated staffing patterns and conditions prevent merit-based appointments and promotions; the rapid liberalization of interest rates distorts the yield profile of financial portfolios; central bank lending frequently adds to inflationary pressure; and exchange rate policy often encourages asset holders to shift out of domestic financial assets.

The legal system in the countries we studied with the (possible) exception of Malawi are weak. (In Malawi, the property rights of large enterprises may be too well protected.) Contract procedures are cumbersome and difficult to enforce. The Gambia's managed fund of nonperforming government-guaranteed debts is instructive. The fund consisted of 24 loans most of which were secured⁴³. By January 1991, four years after the fund was established, less than D5 million of the original D72.6 million had been collected. In effect, the government could not enforce its own contract laws. A similar situation exists in Senegal where the government has not collected any of the outstanding debts to ONCAD. Moreover, it is estimated that the government will recover less than 5 percent of the debts of the five financial institutions which were recently closed⁴⁴.

The state-owned banks have usually been constituted using the same wage and hiring practices as the government. This has been the case in Senegal, The Gambia, and Ghana. These employment codes may serve government purposes (a point disputed by some observers) but they are totally inadequate for financial institutions which require staff with specialized skills and the initiative to use those skills. In this respect, the creation of the CNS (Crédit Nationale du Sénégal) in Senegal using bureaucrats and former employees of the five defunct institutions raises some serious questions. The results of managing banks with non-bankers have been uniformly poor in Senegal.

We have focussed on these complementary measures to emphasize the point that financial rehabilitation should not proceed (and

cannot succeed) in a vacuum. In addition to the complementary policies, some attention to the activities of other institutions, e.g. cooperatives and insurance companies, is required. It has been common in the countries we have studied for the poor performance of the banks to be associated with loan defaults by public enterprises such as marketing boards or cooperatives. This was the case in Senegal and The Gambia. The situation has been addressed by a ban on government guarantees, public enterprise reform, and a special effort to disentangle the government-parastatal interlocking arrears. Nigeria resolved the problem by closing its marketing boards. In Malawi, the banks experienced some difficulties when a major shareholder became seriously overextended.

These intricate patterns of interlocking public sector debt usually require a comprehensive approach to rehabilitation. The problem is frequently symptomatic of other deficiencies -- poor budget discipline, government interference, managerial opportunism, and attempts to disguise the true extent of the fiscal deficit from the donor community (Fye and McPherson 1987). The overall financial reform program is generally designed to deal with these issues.

Once progress towards the rehabilitation of the financial sector is underway, the attention of the government and central bank can shift to methods of expanding the scope and depth of financial markets within the economy. A further concern will be to enhance competition among the existing financial institutions so that a more rational allocation of financial resources can emerge.

C. Improving Financial Markets

Financial markets are generally defined as those in which financial assets and liabilities are traded (Drake 1977; Kaufman 1989:Ch.3)⁴⁵. By coordinating the demand for and supply of financial instruments, financial markets serve the following purposes (Johnson 1967; Meier 1983:Ch.2). They:

- i. ration finance according to the borrower's willingness to pay;
- ii. allocate the finance to its most productive use(s);
- iii. allocate demand among financial instruments;
- iv. stimulate the release of real savings in financial form;
- v. reward the factors employed in financial intermediation;
- vi. provide incentives for the expansion of the financial sector;
- vii. provide a systematic basis for the evaluation of risk and the transformation of risk-bearing activity over time.

Notwithstanding the need for relatively costly specialized skills, the resource costs of establishing and operating financial markets are generally low. When judged in input-output terms, the resources devoted to financial operations are a minor portion of national resources (Leontief 1966:Ch.4; Goldsmith 1967; Drake 1977:151)⁴⁶.

With so many useful functions to perform and so few resources involved, why have SSA in general and the countries we have studied in particular been so poorly served by financial markets?

i. Market Failures and the Non-Existence of Markets

The low resource cost of establishing and operating markets is only one consideration in the development of financial markets. Numerous other supporting arrangements are needed to generate the trust and confidence for markets to expand and flourish (Maroni 1978; Kitchen 1986; Roe and Popiel 1987; Goodhart 1989:19-21; Paulson 1989). These other requirements have often been overlooked (or underestimated) with the result that many of the financial markets established in SSA have been ineffective⁴⁷. An example is the stock exchange in Nigeria. Created in 1960 as the Lagos Stock Exchange and reconstituted in 1977 as the Nigeria Stock Exchange, its existence alone has done little to mobilize resources or improve liquidity (CBN 1979:137-139; CBN 1990:65-71).

A widely held view of why financial markets perform poorly is that the financial systems are fragmented and highly repressed (McKinnon 1973; Shaw 1973; Ghatak 1978:74-75; Von Pischke, Gordon, and Adams 1983; Adams, Graham and Von Pischke 1984; and Fry 1988)⁴⁸. Indeed, the repression of formal markets through interest rate regulation and subsidy programs has driven much financial activity into fragmented, informal markets. Fragmentation reflects price and quantity distortions associated with taxes, subsidies, and quotas, monopolistic and oligopolistic behavior, technological barriers to entry, factor immobility, and search costs and informational asymmetries.

Financial market failures are also attributed to externalities, increasing returns, public goods, and gross inequities in the distribution of income (Johnson 1967; Meier 1983:137-8; Wolf 1990:Ch.2; Swinburne 1989; Killick 1991). Finally, corruption, opportunism, and "regulatory capture" (Ladman 1981; Kane 1981) have an adverse effect on the performance of financial markets.

All of the above difficulties are evident in the countries of SSA. Examples of financial fragmentation and repression have already been noted above, particularly with respect to price and quantity restrictions on financial activities. Oligopoly exists in Malawi (with only two banks) and The Gambia (with only three). Technological and institutional barriers to entry characterize the rural areas of all of the countries in the study. The

difficulty of communicating with the rural areas is an obvious technological barrier⁴⁹. Factor immobility is related to fragmentation in a number of ways. Financial resources flow much more readily from the rural areas to the urban areas. They flow abroad more readily as well.

Search costs and informational asymmetries severely constrain the operation of existing markets and the evolution of potentially useful markets. Two aspects are important: (i) competitive prices are not a complete guide to action by market participants; and (ii) the relevant information which is needed for market participants is dispersed and costly to assemble.

The informational inadequacies of competitive prices were noted by Arrow (1959). In a competitive market, buyers and sellers are assumed to be price-takers. Demand (D) and supply (S), both of which are functions of price (P), are related as follows:

- (1) $D = D(P)$
- (2) $S = S(P)$
- (3) $dP = h(D-S)$ $h' > 0$; $h(0) = 0$.

In equilibrium, $D=S$ and the change in price, dP , is zero. Out of equilibrium, however, prices change according to (3). Who then, Arrow asked, decides at which price trades will occur? He concluded that, contrary to assumption, buyers and sellers would have to engage in price search. The costs of the search may outweigh the benefits implying that competitively determined prices may not be adequate to support a market⁵⁰. This issue was addressed by Hayek (1945) who focussed on the costs of coordinating the disparate individuals each of whom has some of the information needed for the market to function.

Dealers and other intermediaries can ameliorate some of the difficulties created by search costs and coordination problems. In practice, however, the potential markets are too thin and the spreads which can be earned from such intermediation are too low relative to the costs and risks involved in "making a market."

An obvious financial externality is the high cost of intermediation associated with the limited competition and concentrated lending patterns of the formal financial institutions (de Rezendi Rocha 1986). All users of financial services, both formal and informal, bear some of these costs. A major reason for the inefficiency is the inability of any financial institution to benefit from economies of scale. A public good which undermines the operation of local financial intermediaries is the rediscounting service provided by the central banks for government debt. This service which is offered at or close to par reduces the incentive which any potential market makers in government debt may have for establishing a secondary market. Finally, the problems of corruption and

opportunism (of which, "regulatory capture" is a particular example) undermine financial markets through the erosion of debtor morality, the non-enforcement of contracts, and fraud.

ii. Non-Market Failures

A common method of addressing the problems of market failure has been through government intervention, which is typically seen as being necessary on welfare grounds. Indeed, a basic presumption of welfare economics is that government intervention is necessary to correct market deficiencies (Schumpeter 1954:1069-1073)⁵¹.

Government intervention in the banking system is an almost universal phenomenon. The controls on banking, which include reserve requirements, minimum capital standards, the type of activities permitted, and the structure of bank ownership among others have been based on two considerations. The first is the safety and security of the banking system itself. Banks are so highly levered with respect to their capital that regulation is deemed to be indispensable in order to limit the risk associated with such leverage. The second consideration is macroeconomic stability. Since banks operate on fractional reserves, direct or indirect controls are deemed necessary to limit the degree to which banks can expand credit.

Restrictions have also been imposed on financial institutions for other reasons. Governments have sought to use finance and/or credit as a means of promoting entrepreneurship; stimulating the "savings habit" and mobilizing resources; encouraging financial investment; developing priority sectors; and supporting special groups such as farmers (Jucker-Fleetwood 1964; Bhatt 1974; Furness 1975; Newlyn 1977:Ch.2; Bajo 1978; Drake 1980; Adams and Von Pischke 1984).

Frequently, however, these controls and directives have produced a series of "non-market failures" (Wolf 1979; 1990; World Bank 1989; Killick 1991:Ch.3). Those failures have many causes. As a practical matter, few governments have appreciated how difficult it is to "promote financial development." As noted earlier, governments have focused almost entirely on the supply side (institutions and instruments) to the neglect of demand factors. A second problem has been that finance has been, simultaneously, an instrument and target. Finance has been supplied to support "development" while "development" has been seen in terms of the finance supplied. Finally, other government policies have undermined the financial system. For instance, in order to reduce the cost of financing the budget deficit, many governments have fixed the interest rate on government debt. This policy has made the government debt unmarketable. It is held only by institutions that have no other option.

iii. Financial Markets in the Study Countries

The above discussion provides two specific reasons why markets may perform poorly. First, potential buyers and sellers may find the search costs too high to induce them to participate in the market. Second, even if they did participate the information needed to support the market is highly concentrated. These insights are useful in understanding the limited degree of development of the financial markets in the countries we have studied. Interbank markets for bank reserves, for instance, do not exist in any of the countries. The most lively trading of bank reserves occurs in Nigeria. The central bank acts as the intermediary and the spreads vary widely. In effect, central bank mediation is a mechanism for reallocating reserves rather than determining their price. The BCEAO operates the "marché monétaire" in the UMOA. There is no open bidding for funds and operators prefer to direct their funds through the central bank because of the associated guarantees of liquidity and security. There is no interbank market in Malawi or The Gambia. Ghana has recently established a Discount House which could eventually stimulate this activity.

Markets for government paper in the form of T Bills and Bonds or Development Stock are confined to the central bank. In Senegal a tax on financial transactions (which has only recently been dropped) and the relative ease with which the government and its agencies could borrow abroad reduced any incentive for dealing in government bills or bonds. Nigeria has a large volume of T Bills and Bonds outstanding. These are regularly rolled over in amounts greatly in excess of the capacity of the local market to absorb at the rate of interest which the central bank is prepared to accept⁵². This problem, however, is incidental relative to the difficulties created by the high PSBR because of the government deficit. The central bank is the only organization which will absorb such a large volume of debt at the yields the government is prepared to pay.

In Malawi, the market for government paper is thin and the yield which the Treasury will accept (approximately 11% at the end of 1990) is unattractive. As a means of absorbing liquidity, the Reserve Bank has begun issuing its own paper. This has been issued at a discount of approximately 4%. This paper is reluctantly held by the banks.

Some short-term government securities are traded among the banks in Ghana even though the volumes involved are usually small. This is the only example of a secondary bill market in any of the five countries.

The Gambia shifted to a T Bill tender system in July 1986 as a means of establishing a market-determined interest rate. Initial

volumes of Bills were low, but the rate of discount (19%) was attractive. Over the last five years the volume of bills outstanding has increased to as much as D250 million (approximately 15% of GDP) and yields have ranged between 16 and 20%. There is no secondary trading in T Bills. The government has also issued T Notes on an irregular basis. These are one-year notes with a yield of approximately two points above the Bill rate.

Markets for commercial paper do not exist in Senegal, The Gambia, Malawi and Ghana. A small amount of trading occurs in Nigeria.

Viewed broadly, the financial markets are unsophisticated and undeveloped. They are dominated by the supply of official paper and the central banks readily intervene to ensure the "stability of the market." The opportunities for arbitrage profits and hence the prospects of developing secondary markets in these assets are limited⁵³. They will remain limited while the government keeps the yields on its debt low and the central bank provides an open-door rediscount policy.

iv. Alternative Financial Markets

The lack of development of the interbank, bill and bond markets contrasts with the relatively rapid emergence of a series of parallel or alternate markets in the five countries and elsewhere in SSA. In fact, the alternative markets have been stimulated by the gaps in the formal sector markets as borrowers and lenders sought to accommodate their various financial demands.

Parallel or alternative markets, the most obvious of which have been the foreign exchange markets have flourished in The Gambia, Ghana, and Nigeria. Their success demonstrates that SSA is not a sterile setting for financial development provided that there are incentives for mutually beneficial trades and the minimal information required for operators to participate in each market exists. In the foreign exchange market, the incentives were created by the respective governments' unwillingness to adopt a realistic exchange rate policy. Over time the distortions created by fixed exchange rates, capital controls, and high rates of domestic inflation increased the premium for foreign exchange. The dealers who operate in the market have minimized the information they require by confining their transactions to the spot market.

Although small relative to the foreign exchange markets, several other alternative financial channels have been used (Hugon 1989). In Malawi, there has been some expansion in private placements, which in some instances have been mediated by an insurance company (Bolnick 1990). Nigeria has a large number of finance houses which operate on the fringe of the formal sector. They mobilize wholesale deposits (some of which are reported to come

from the commercial banks) and lend to selected customers at attractive interest rates beyond the control and direct scrutiny of the central bank.

The emergence of these alternative financial mechanisms has had important implications for financial reform. In this respect, it is useful to recall that Gurley and Shaw (1956; 1967) argued that the development of non-bank financial institutions could undermine discretionary monetary policy. With one minor modification, their insight applies to the situation in SSA. The difference is that the disintermediation which is undermining monetary policy has occurred in favor of off-shore arrangements.

Local transactions are typically handled in two ways, directly in foreign currency or indirectly through the operation of off-shore bank accounts. Some asset holders, of course, find the improved liquidity, greater security, higher return, and better service available from banks in the international financial centers so attractive that they abandon local financial assets. This is the basis of currency substitution and ultimately capital flight (Tanzi and Blejer 1982; Williamson and Lessard 1987).

When there are incentives (either as low costs or high yields) and the information requirements are not excessive, financial markets will develop⁵⁴. In SSA generally and the countries we studied in particular, the authorities have been antagonistic towards the development of these markets. They have emerged and expanded rapidly, nonetheless.

There are useful lessons here particularly since these so-called "black" (or "parallel", "unofficial", or "non-formal") markets have now become well-established. The authorities should not presume that additional controls will eliminate them. Indeed, the past controls themselves have largely generated the conditions which support these markets.

D. Increasing Financial Competition

A competitive market is characterized by many fully informed buyers and sellers of homogeneous products operating in a setting in which there is freedom of entry and mobility of factors. Such markets, however, will only emerge if a supportive economic, political, social, and institutional setting exists⁵⁵.

Many of the large financial markets in developed countries approximate this idealized model. The Federal Funds market in the US, the foreign exchange markets in New York and London, the government bond and bill markets in the US and UK are examples. By contrast, none of the financial markets in SSA approaches the ideal and many potentially useful markets simply do not exist.

Some progress is being made, however. The degree of financial

competition has been increasing in the study countries largely due to financial reform, preparations for the introduction of indirect controls, and the influence of international financial markets.

The inordinate expense and time which have already been devoted to financial rehabilitation in Senegal, The Gambia, and Ghana provide an incentive to sustain the financial reform effort. A key dimension of reform, as noted above, is the set of measures being taken to force the financial institutions to operate on a "commercial basis." To become commercialized, the institutions are having to learn how to compete.

The operation of indirect monetary controls depends on competition (Harrington 1974). Indirect controls, in turn, stimulate competition. Under a system of indirect control, banks compete for deposits in order to finance their loans. The total level of deposits is controlled by the central bank through its reserve operations. Typically, the flow of funds through any individual bank during a specified period, e.g. a month, week, or day, is uneven. For some banks, the increase in deposits may exceed the increase in their loans. Other banks will have the opposite experience. In a fully-integrated, competitive financial market where information is readily available, banks with surplus reserves will have an incentive to sell them to banks which require reserves to satisfy the demand for loans. Individual banks also may try to increase their share of deposits by offering higher interest rates. Due to competitive pressures, these offers will reflect the prospective return on assets less operating costs and a normal risk-adjusted return to capital (Cooke and Rowe 1986; Goodhart 1989:145-150; Meek 1990).

Interbank and short term securities markets play an important role in the competitive process. When access to the central bank's discount window or refinancing facility is restricted, commercial banks use these markets to adjust their reserve positions. Since all banks have the opportunity to buy or sell reserves, the cost of funds established in these markets provides a uniform basis for setting loan and deposit rates. Thus, the existence of broad markets in short-term securities and interbank loans leads to more effective competition in deposit and loan markets. At the same time, the existence of competition enable the central bank to enter the markets in order to expand or contract the supply of reserves without undue concern for the effect of its actions on particular banks.

The use of credit ceilings and regulated interest rates in the countries we have studied has short-circuited the competitive process. Therefore, during the move towards an indirect monetary control system a variety of transitional arrangements are likely to emerge. The banks may develop market-sharing arrangements. This situation already exists in Malawi. In Senegal, the

situation is still unclear. Some rigidities in the financial system are breaking down now that the "protocol interbancaire," which placed limits on bank rates, spreads, and fees, has been revoked. However, the difficulties being experienced by state-owned banks has reduced the pressure for other banks to discard their non-competitive arrangements.

An alternative transitional scheme is for the banks to set market-clearing interest rates in loan markets but limit the extent to which they compete for deposits. Such an arrangement has emerged in The Gambia under which the banks are continuing to earn high returns but deposit mobilization remains limited. With little pressure on earnings, bank managers are continuing to focus their lending activities on their traditional customers.

While these arrangements restrict competition and diminish the advantage of moving to a market-oriented system, they should be kept in perspective. The countries we have studied are in the process of moving from systems which were highly regulated, poorly administered, extremely distorted, and subject to large losses which are still being paid for. Some transitional learning problems and reorganization difficulties should be expected. The transition, however, is being accelerated by the influence of international factors.

We have noted earlier that one response to the financial dislocation within SSA has been currency substitution and the use of off-shore financial intermediaries. These phenomena have placed (relatively strict) limits on the central bank's discretion over domestic monetary policy. This form of disintermediation also restricts the extent to which local financial institutions can exercise any monopoly position they may enjoy.

Viewed in historical context, this outcome is ironical. A principal rationale for establishing central banks in most countries of SSA was that it would provide the authorities with the independence they needed to take the necessary financial measures to promote economic development (Abdel-Salam 1970; Furness 1975:Ch.3; Falegan 1978; Bajo 1978; Onoh 1982:32-37). The lesson of the last two decades, however, is that the scope for independent monetary action has been severely limited. The attempt to stimulate growth through cheap credit has led to inflation and balance of payments difficulties. This has occurred whether countries have had fixed or floating exchange rate regimes⁵⁶.

Another lesson is that small, trade-dependent countries in an international setting which has been undergoing rapid financial innovation have few options for discretionary financial policies. By failing to recognize this, many central banks in SSA have pursued policies, e.g. with respect to domestic credit creation,

interest rates, and the exchange rate, that were unsustainable. The resulting accumulation of foreign debt has narrowed further the central bank's policy options.

The impact of international market pressures is likely to intensify in the future. As more information about investment opportunities in off-shore markets increases and as more asset holders take advantage of modern communications technology, local institutions will experience keener competition. Initially, this will take the form of a loss of funds from the system as surplus units take advantage of higher risk-adjusted yields in off-shore financial markets. In order to retain deposits, local financial institutions will find that they have to more closely align their deposit rates with those prevailing in the major international centers. Competitive pressure will also be felt on the supply side if the local banks seek to maintain high interest rate spreads. As local lending rates rise, potential borrowers who have international connections will seek accommodation elsewhere.

In effect, the alternative financial opportunities available in off-shore markets are competing more intensively with the services provided by domestic financial institutions. The competition has placed limits on the spreads which can be charged, especially to the larger customers who have international connections or can readily generate them. Over time, domestic financial institutions will have to respond constructively to this competition by reducing their spreads or lose market share. They would then be confined to servicing a localized segment of the market consisting of those who cannot borrow abroad but who have the appropriate connections and collateral to give them access to the formal sector.

The genie is out of the bottle. Under a system of capital controls and directed credit, some degree of financial insulation existed. Today, very little insulation remains and the local market niches which once provided established formal sector institutions with safe, profitable opportunities are diminishing. That is, financial institutions are finding that their scope for non-competitive behavior has narrowed substantially.

IX. Restoring Confidence in the Financial System⁵⁷

As a means of improving monetary management, it will be necessary for the government and the central bank to make a special effort to rebuild public confidence in the financial system. Two aspects require special attention. The first is confidence in the value of locally denominated financial assets. The second is confidence in the ability of the monetary authorities to assure the solvency and liquidity of the financial system.

The importance of confidence should not be underestimated (Gillis

et al. 1987:358-360; Kindleberger 1987; Dixit and Nablehuff 1989; Mayer, Duesenberry, and Aliber 1990:Ch.24; Humphage 1990). Indeed, since the value of financial instruments (including money) depends on their acceptability rather than their intrinsic properties⁵⁸, confidence is a precondition for the successful operation of any modern financial system (Duesenberry 1964:6; Hicks 1967)⁵⁹.

High and rising inflation, exchange rate depreciation, negative real interest rates, doubts about the solvency of key financial institutions, and the poor quality, high cost, and limited range of financial services have combined to erode public confidence in both the financial instruments and the financial institutions in the countries we have studied. Indeed, local financial operators widely view the central bank itself with skepticism and distrust. The monetary policies of the last two decades have left deep scars and few among the public believe that the respective central banks have the ability to effectively manage the financial system. The most obvious examples of this lack of confidence are the prevalence of parallel foreign exchange markets, disintermediation, the use of alternative credit channels, and the shift of financial resources abroad.

Table 4: Official Reserves and Private Off-shore Deposits
1981 and 1989

	\$ million		% of	\$ million		% of
	Offic. Reserves	1989	Mon. Supp.	Offsh. Deposits	1989	Mon. Supp.
	1981			1981		
Nigeria	3371	1486	26.8	300	2790	50.2
Ghana	136	272	24.4	70	320	40.5
Senegal	8	15	1.2	70	500	39.4
The Gambia	3	16	28.	--	80	139.9
Malawi	43	77	23.9	--	80	24.8
Africa	10995	9417		6400	34710	

Source: IFS Yearbook 1990 (1991)

* Offshore deposits are described as "cross-border bank deposits of non-banks by the residence of depositor."

The data were reported in billions.

** % of Mon. Supp. is percentage of local money supply (in \$)

The growth of off-shore deposits (which are only a fraction of the resources shifted abroad) seems to be a sensitive measure of the state of confidence. For example, as Table 4 shows, the ratio of official foreign exchange in African countries relative to the off-shore bank deposits held by African residents was 1.4 in 1981; in 1989, it was 3.7. The situation was even more

dramatic for some of the countries studied. For instance, in Nigeria offshore deposits were less than 10% of official reserves in 1981; by 1989, they were almost double. Similar sharp changes are evident in the other countries. Relative to the local money supply the off-shore deposits are also significant. The \$80 million held off-shore by Gambian residents in 1989, for instance, was equivalent to 45% of GDP and 140% of the local money supply.

The chronic lack of faith evident in these data can amplify the effects of any economic shocks which may occur. When there are threats of inflation or balance of payments difficulties the public may fear a tightening of exchange controls and a return to credit rationing or an increase in financial insolvencies. These uncertainties compound the risks involved in holding assets denominated in local currency.

Vulnerability to financial crises will be a feature of financial systems in the countries of SSA until their governments re-establish a record of stability. That will be true whether the system of monetary management is direct or indirect. There is, however, some reason to expect that the latter system, which depends on market mechanisms, may be more vulnerable to crises of confidence than the ceiling systems.

Should a sudden loss of confidence in the system lead to capital flight or to a shift of resources out of the banking system, the resulting exchange depreciation and inflation will require the central bank to restrict credit. Under a ceiling system, the central bank would normally respond by reducing the limits on bank lending. With an indirect control system, bank lending would be reduced by withdrawing reserves. Interest rates would then have to rise to reduce the demand for loans. To have the desired effect, the required increase in nominal interest rates at times may be very large. The associated risks of economic and political disruptions may tempt the central bank to re-institute credit rationing and exchange control. If the central bank were to re-impose controls after having committed itself to move towards indirect monetary control, serious questions would be raised about its intentions⁶⁰.

To avoid such a situation, the central bank needs close cooperation and support from the government, particularly the ministry of finance (Grant-Suttie and Mehran 1982). There has to be a genuine willingness on the part of the government to accept the interest rate consequences of indirect monetary controls. In the absence of government support of this nature, the expanded reliance on market mechanisms for monetary control would expose the central bank to severe criticism should events go awry.

As a means of insulating the central bank from such criticism, there has been renewed interest in the question of central bank

"independence." The Banking Act (1990) in Malawi was framed with this goal in mind. Yet, few central bankers are unrealistic enough to presume that they can be genuinely independent⁶¹. Governments can always change the law particularly if central bank actions have adverse political consequences (Young 1973:26-27; Fair 1979; Hetzel 1990).

In fact, the quest for independence misses the point. The central bank will be far more constructive if its staff can establish a broad-ranging program of consultation and cooperation with the government which is based on the mutual recognition of the two institution's respective constituencies and responsibilities⁶².

None of the central banks in the countries we studied enjoys such a relationship. Providing adequate finance for the government dominates the activities of the Central Bank of Nigeria; reducing the cost of government finance is a key objective in Malawi and Ghana; and funding the public sector is the prime concern of the Agence in Senegal. The central bank in The Gambia is no less subservient to the ministry of finance than in the other countries. But since mid-1985 IMF strictures on the government have spared the central bank from engaging in the type of financing which exacerbated The Gambia's economic problems in the late 1970s and early 1980s.

Allowing all of these central banks to take a more constructive role in macroeconomic management should be a major objective of the respective governments. Over the short-term, it is difficult to judge the extent to which this would enhance confidence in the local financial system. Much would depend on the capacity of senior central bank staff and how willing the largest asset holders are to believe that genuine reform efforts are underway. But, over the longer term, the maintenance of central banks which are subservient to the government will be counterproductive. Such a policy has created financial havoc in the past; there is little to believe that it can serve any useful purpose in the future.

After years of financial disruption and numerous failed efforts at reform, central bank (and government) actions are going to count far more than words. Indeed, the announcement of yet another attempt at reform may hardly be noticed. To begin the process of restoring confidence, the central bank should focus on achieving a reputation for sound finance. Above all this will require policy actions to reestablish macroeconomic stability (Drake 1980:Ch. 9; Paulson 1988; Johnson 1988; Fry 1988:425-432; Johnston and Brekk 1989; Ruding 1990)..

Once some progress towards macroeconomic stability is evident, all financial institutions will have a more conducive setting in which to operate. The general public, however, will need to be

convinced that these institutions will be well managed. Stabilization, therefore, should be supported by efforts to improve the supervision of the financial system. We now turn to these issues.

A. Macroeconomic Stabilization

The successful implementation of financial reform requires some progress towards macroeconomic stability. In turn, financial reform itself is stabilizing⁶³. It is commonly believed, however, that if financial liberalization precedes the restoration of macro stability the effects are likely to be adverse (McKinnon 1986; Bruno 1988; Blejer and Sagari 1988; Killick 1991:Ch.7). In a liberalized financial regime, macro instability leads to unpredictable interactions among interest rates, exchange rates, and inflation⁶⁴.

Thus far, in the five countries we have studied stabilization programs have preceded financial liberalization. Ghana experienced a decade of major macroeconomic instability beginning in 1974⁶⁵. Only since 1985, when some degree of stabilization was achieved, has financial reform been undertaken and met with some success (Younger 1990). The situation in The Gambia is similar⁶⁶. The economy did not stabilize until mid-1986, approximately 18 months after the ERP was introduced (McPherson and Radelet 1991). The major thrust of the financial reform effort began at that point.

Malawi's internal and external imbalances worsened from 1978 to 1986⁶⁷. With the measures taken by the government in 1987 and 1988 to reduce domestic credit creation, control foreign borrowing, and reduce pressure on the exchange rate, the economy stabilized (Gulhati 1989; Bolnick 1990).

The Nigerian situation has been dominated by fluctuations in the world oil markets. The sharp increases in world petroleum prices in 1973 and 1979 dramatically increased Nigeria's external earnings. Expenditures, however, were considerably larger than earnings. By the mid-1980s when the world price of oil declined sharply, Nigeria's economy deteriorated. After reaching a peak in 1980, real GDP fell. By 1985 real per capita income had declined by 31.4%. Moreover, the prospect of growing oil revenues enabled Nigeria to borrow heavily. By 1985, external debt was \$19.3 billion (equivalent to 25% of GDP). With the collapse of export earnings, this debt could not be fully serviced⁶⁸.

For several years, the Nigerian government rejected the idea of implementing a stabilization program. Eventually the pressures associated with economic collapse -- high and rising inflation, uncontrolled government deficits, shortages of imports, cuts in external finance -- forced the government to shift its attention

from attempting to finance the imbalances to adjustment. This led to the introduction of the Structural Adjustment Program in 1986 (Mabogunje 1987). As this program stabilized the economy, a wide-ranging effort has been undertaken by the central bank to restructure and reform the financial system (Ahmed 1989).

Finally, the situation in Senegal is still in a state of flux. Unlike Ghana, The Gambia, and Nigeria, where per capita income declined sharply and inflation accelerated, the Senegalese economy did not get out of control. By contrast, the economy stagnated. Real per capita income in Senegal declined by 14% over the decade 1970 to 1980; it has continued this downward trend since then⁶⁹. In response, the government has been in the process of adjusting the economy for most of the last decade. World Bank and IMF programs and debt relief through the Paris Club have been perennial features of the 1980s. Only recently, however, has financial reform become a major focus of government attention.

In all of these countries, the reduction in macroeconomic fluctuations has created a setting which supported financial reform. In turn, financial reform has helped to stabilize the economy. One point worth noting is that the countries which have stabilized and made most progress with financial reform (Ghana, The Gambia, and Malawi) have all significantly reduced their fiscal deficits. This outcome supports the view that financial reform and macro stabilization are impossible without reductions in the fiscal deficit (Tait 1989; Greene 1989).

B. Financial Supervision

The difficulties and high costs of the Savings and Loan debacle in the United States provides some useful lessons to other monetary authorities, particularly those in SSA. One obvious lesson of that experience has been that efforts to deregulate and liberalize the financial system expose financial institutions to increased risks (Maisel 1979; Benston 1986; Eisenbas 1986; Corrigan 1989; Kareken 1990)⁷⁰. Without appropriate supervision to minimize questionable financial practices, excessive portfolio concentration, and deter fraud, the prospects of financial failure increase sharply.

The lesson is apt and timely for developing countries where financial supervision is often weak or non-existent (World Bank 1989:Ch.6).

Bank supervision has been particularly ineffective in most countries of SSA⁷¹. Central banks generally lack competent supervisors and bank inspections have been irregular and incomplete. Furthermore, even when problems are correctly identified governments have intervened to prevent remedial action especially when state-owned banks have been involved.

Improving supervision will be time-consuming and difficult. Several areas need attention to ensure the safety and soundness of financial institutions and that the relevant information is assembled and analyzed (White 1990). First, the regulations and laws that already exist regarding financial institutions have to be enforced. Second, the staff required to undertake regular inspections and audits of financial institutions have to be better trained. Third, government interference in the operations of financial enterprises in which it has an interest has to cease. And fourth, the central bank has to develop a strategy for the appropriate use of its own support. Its own lending has to be rationalized and, in most cases, sharply reduced.

The enforcement of existing regulations and statutory provisions rather than the introduction of new ones should be a priority. The history of the non-use and mis-use of the regulatory powers of the central bank in the five countries we studied has generated widespread contempt and disregard for financial regulations. A useful and relatively rapid start to any program of financial reform would be for the central bank to enforce the numerous regulations that exist but, for various reasons, it has failed to enforce. Perhaps the most important among these would be the penalty provisions for breaching reserve ratios (even when these are zero); restrictions on bank officers borrowing from their own banks; capital adequacy provisions; reporting requirements; loan loss coverage; asset concentration limits; and the range of permissible banking activities (Dale 1984; Mikdashi 1990; Bench 1990; Polizatto 1990).

Some laws and regulations for which the central bank is responsible may be outdated and should be changed. Nonetheless, there is little reason to accept the presumption, which is common among the donor community, that new legislation will be observed more assiduously than existing legislation⁷². Central banks have to demonstrate that they can responsibly begin to enforce existing regulations. Without such a demonstration, none of the senior staff of the financial institutions will have any reason to think that new laws will be enforced⁷³.

The development of adequate capacity in bank supervision is difficult for any central bank. Few central banks in SSA are more than 30 years old. The lack of supervisory capacity partially reflects the time required to establish a strong cadre of adequately trained and experienced staff to support all of the central bank's activities. Nonetheless, the lack of supervisory capacity exacerbates the staffing weaknesses. Many financial institutions are now in trouble precisely because they were poorly supervised. Dealing with the situation requires additional attention from supervisors and other central bank (and ministry of finance) staff which often leaves little time for detailed attention to the problems of financial reform⁷⁴.

Few central banks have been able to respond adequately. The BCEAO recently created the Commission Bancaire. In The Gambia, financial supervision of the government-owned bank has effectively been taken over by the donor community (World Bank and USAID) through their structural adjustment and financial reform programs. The supervisory capacity of the central bank in Nigeria is being severely overtaxed by the recent increase in the number of financial institutions which have been granted licenses. Supervisors in Nigeria were already fully engaged with the problems of several state-owned banks.

The Bank of Ghana has devoted considerable effort to strengthening bank supervision. This capacity will be needed once the banks have been recapitalized. Finally, in Malawi local supervisory capacity is limited. The IMF has been providing technical assistance in this area.

C. Systems of Financial Supervision

One of the most common schemes used by bank supervisors is the CAMEL system (FRBSF 1990). Banks are ranked according to their capital adequacy, asset quality, strength of management, earnings, and liquidity. Since capital is a financial institution's ultimate defense against misfortune, an adequate level of capital (and reserves) is a key measure of soundness of a financial institution (Pozdena 1991). A problem has been that the accepted standards of capital adequacy have changed over time, especially as the "safety-net" of bank regulation and deposit insurance has been expanded. For instance, as the Chairman of Fed, Mr. Greenspan recently noted, US banks held an average of 50% of equity capital against total assets in 1840; by 1890 the average had fallen to 25%; and by 1990, it was only 6% (Hoskins 1990).

Such a level is now widely seen as too low particularly in view of the broader range of risks being assumed by banks and the potential costs of failure. The ratio of reserves to assets has been able to fall so sharply because of the explicit and implicit insurance provided by central banks and governments⁷⁵. Since many governments now view their contingent liabilities for insuring the financial system as being too high, a process is now underway to require banks and other financial institutions to increase their capital. Under an agreement sponsored by the Bank for International Settlements all banks in the industrial countries will hold capital (appropriately adjusted for risk) equal to at least 8% of deposits by January 1993 (BIS 1988). None of the banks in Ghana; none of the state-owned banks in Senegal; the GCDB in The Gambia; and several state-owned banks in Nigeria can presently meet this capital standard.

Asset quality has numerous dimensions. The most obvious are the inherent productivity of the activity for which the loan was

made, the collateral and guarantees provided, and the enforceability of contracts. Most banks in SSA, whether private or state-owned, have found that new activities (defined as lending outside their traditional business) are extremely risky, that the collateral offered has limited value (even when it is a government guarantee⁷⁶), and that few contracts are enforceable particularly if they are long term. As a result, most bank lending is short-term; fully secured by goods-in-transit, compensating balances, or other liquid assets; and is concentrated in traditional activities (such as trade, construction, personal loans). Furthermore, as noted above, credit is rarely (if ever) rationed by the interest rate alone. Most banks lend to established customers.

Many of the problems of the state-owned banks emerged when they diverged from these banking practices. In some cases, their activities made a useful social contribution by expanding the range of activities which were eligible for bank funding. This effort was sustainable while opportunistic behavior remained at low levels. Nonetheless, because of the inherent weaknesses of the legal system and the failure of banks to properly monitor their lending, the system began to unravel as increasing numbers of debtors and bank officials took advantage of the situation.

The strength of management is crucial to the integrity of the financial system. Indeed, at one level the CAMEL index itself is a measure of how a financial institution is managed. For instance, a well-managed bank will have adequate capital, high quality assets, a solid earnings performance, and maintain access to liquid assets.

There are, however, other aspects of management which bank examiners attempt to determine through the examination process. This relates to the general engagement of the overall bank management and the board of directors in the operations of the institution. No financial institution is immune from mistakes, fraud, and losses. The key issue, however, is how the bank's management responds, what sort of controls exist to detect problems before they snow-ball, and what sort of strategies exist to work out the difficulties the bank encounters. Weak managements tend to dither without addressing the main problems⁷⁷.

There is wide empirical support for this view. Recent studies of the US financial system have highlighted the problems posed by indifferent management. For instance, Belongnia and Gilbert (1990) pointed out that while all agricultural banks were subject to the same systemic risks (the collapse of land values, declining farm income, and low agricultural prices) only specific agricultural banks failed. These had typically experienced rapid growth, their portfolios were highly concentrated, their boards of directors were somnolent, fraud and officer misconduct were

prevalent, and their loans/assets ratios were high by industry standards. In a word, they had been poorly managed⁷⁸. Earnings are an important performance criterion because they provide the opportunity for the bank to attract additional capital or to strengthen its capital base through retentions. Empirical studies show that bank failures are highly correlated with a deterioration of earnings (Demirguc-Kunt 1989). Our research in Senegal, Ghana, The Gambia, and Nigeria reinforce this finding. In Malawi, the difficulties experienced by the Commercial and National banks in the mid-1980s had a major impact on their earnings (Bolnick 1990).

The final element in the CAMEL system, liquidity, is crucial when the bank's portfolio is subject to shocks. Under normal banking conditions with regular flows of deposits, loan repayments, and asset redemptions, most banks are sufficiently liquid to meet the habitual pattern of withdrawals. However, if there are unexpectedly large withdrawals, a well-managed bank will usually have some high quality short-term assets that can be sold or rediscounted.

Under most circumstances, these (so-called) secondary reserves provide adequate liquidity. Problems arise with institutions where the maturity structure of their assets and liabilities is mismatched and the quality of their assets is poor. The GCDB in The Gambia, which seems typical of other state-owned banks we reviewed, had a seriously mis-matched portfolio. Many of its long-term development loans were financed by deposits and short-term accommodation from the central bank. Other short-term loans on overdraft, e.g. to the Cooperatives, were in fact long-term since they were not being rolled over. Furthermore, when the bank's financial difficulties intensified, none of its secondary reserves proved to be liquid.

D. Government Interference

A common feature of the countries we have studied is government interference in the financial system. Frequently, the interference has been in the form of ad hoc responses to financial difficulties. Sometimes, however, it emerged as a deliberate component of national planning.

Since any supervisory system has to operate within the existing political context, the extent to which governments continue to interfere will have important implications for financial development. The experience of the last two decades provides some useful lessons in this regard. First, bureaucrats (whether party appointees, central bank officials, or senior ministry of finance staff) make poor commercial and/or development bankers. Second, the instincts of politicians with respect to financial and banking matters have usually been wrong. Third, delaying action does not effectively diminish an economy's financial

problems. That is, time may resolve but it cannot solve the economy's financial difficulties. Fourth, using financial institutions to achieve social goals is counterproductive. And fifth, efforts to re-engage the private sector in the financial system will be frustrated until the government reduces the degree to which it interferes.

Governments have typically appointed civil servants or political hacks to manage the state-owned financial organizations. This has been a costly mistake. Few have proven to be competent managers let alone skilled bankers. Since it is difficult enough for professionals to succeed in banking, it is a puzzle how non-professionals could be expected to properly manage a bank. A cynical view is that there was no such expectation. The politically acceptable and/or bureaucratically innocuous "managers" did precisely what the politicians expected. In the process, however, the banks (and other financial institutions) were incompetently run and incurred large losses.

Politicians have frequently failed to understand the difference between real capital and financial capital. The former can be transformed into the latter whenever there is a market; the latter can only be transformed into the former if additional real saving occurs. (See section IV.A.) The failure of many government-sponsored financial schemes which were designed to promote development has been the result of this misunderstanding.

Another area where politicians are usually misguided or misinformed relates to the type of policies needed to promote financial stability. Fixed interest rates and exchange rates provide stability in two nominal parameters but often at the expense of instability elsewhere (such as monetary growth and external debt). Senegal, which has had a fixed nominal exchange rate since 1948, has experienced major fluctuations in the real exchange rate together with a rapid growth in its foreign debt (Bhatia 1985; Devarajan and de Melo 1987, 1990; World Bank 1988).

Postponing action on financial reform in the hope that the situation will correct itself represents a basic lack of appreciation of the nature of finance and the speed with which financial markets adjust. A government's failure to deal aggressively and constructively with financial problems simply serves to further undermine confidence. Moreover, postponing action has simply increased the ultimate cost of reforming the financial system.

The use of the financial system as a means of achieving non-financial social objectives has rarely succeeded in developed countries let alone the countries we have studied. Perhaps the most overworked argument justifying the use of "cheap" credit to promote one or another items on a government's agenda is that the recipient group are "too poor" to pay high rates of interest

(Adams 1977). Programs have been shown to be inefficient (i.e. they waste resources), ineffective (i.e. they do not fulfill their intended purpose), and inequitable (i.e. they exacerbate the mal-distribution of income and wealth). A lesson from this experience which is now widely accepted by development specialists, is that the financial system should not be used to make grants to particular groups (through the non-collection of loans) or to subsidize particular activities (through cheap loans).

If governments wish to support these groups or activities, while at the same time promoting conditions more favorable to financial development, a more satisfactory, transparent, and ultimately cheaper solution is through budget subsidies.

The fifth consequence of government interference is that it directly discourages private participation in the financial system. The evidence is widespread. Little private capital is invested in the financial sector. Indeed, when given the opportunity many private firms and individuals have withdrawn their capital from the sector. This pattern has continued until it was clear that the governments was serious about financial reform. In The Gambia, the success of the ERP has stimulated private investment in insurance and bureaux de change. Two new finance houses have been established in Malawi following the introduction of financial reforms. Nigeria, as noted already, has experienced a rapid increase in a wide range of financial institutions. By contrast, in Senegal where financial reform is less advanced and government policy is still in flux, private interest in financial sector investment has been minimal. The situation in Ghana is confounded by the difficulties currently facing the banks and the alternative channels which have emerged to help re-absorb repatriated capital.

E. The Role of the Central Bank

A reduction in government interference will have a major impact on the role of central bank. Government pressure for the central banks to support development activities has led to a major expansion of central bank lending. In the absence of adequate national savings which are mobilized and allocated through non-government channels, the central banks have simply underwritten the expenditure of government organizations and selected private enterprises. In the process, the central bank became the lender of first resort; indeed, for many (state-owned) organizations, the central bank has been the only lender.

The dramatic expansion of domestic credit (Table 1) created unsustainable pressures on the financial system. Indeed, more than any other index over the last two decades in SSA the growth of domestic credit symbolizes the fundamental problem of monetary management in the countries we have studied. It has been easy

for governments to obtain finance from their central banks. Furthermore, few governments have been able to resist the temptation. But, simply because a government can borrow from its central bank does not mean that it should. Real improvements in monetary management will only begin to emerge when governments themselves exercise the necessary self-restraint. The needed long-term changes in attitudes towards deficit finance cannot be legislated or (even) externally imposed.

For the central banks to begin playing a constructive role in the financial development of their respective countries two changes will be needed. The first, discussed earlier, is a reduction in the public sector borrowing requirement. For financial reform to be taken seriously, the growth of the PSBR will have to decline to a level substantially below the growth of nominal income. The second change is that the central bank has to limit the access it provides to banks and other financial institutions.

Restricting access to central bank finance will involve specific changes in the discount rate and the quality of liabilities which the central bank will trade. In the past, banks and other financial institutions have found the central bank only too ready to rediscount government and commercial paper at or close to par. Consequently, secondary outlets for this paper have not been needed. Significantly higher standards on the type of paper which the central banks are willing to trade is long overdue.

Reform in the UMOA in this area is particularly important. The BCEAO has been rediscounting the loans made by parastatal banks to parastatal corporations on the presumption that the Senegalese government implicitly guarantees the debt. Since the BCEAO also lends to the government to cover its deficit, closer scrutiny of the value of those guarantees is needed.

The same applies in the other countries where their central banks have been lending to the government knowing that the debt will only be serviced by additional borrowing. The absence of government self-restraint has, in effect, forced central banks to behave in a financially irresponsible way. The task of imposing some sense of responsibility has often fallen, by default, to the IMF and other donors which support financial reform.

If a central bank is to succeed in limiting its lending, its responsibilities as lender of last resort will have to be determined. Developing guidelines for the lender of last resort facility should be combined with improvements in bank supervision (Sayers 1957:Ch.9; Humphrey 1986:304-311; Johnson 1988; Goodhart 1988:Ch.7; Mayer, Duesenberry and Aliber 1990:141; Bordo 1990). One approach is that the central bank refuses to use the discount window to support insolvent institutions. At the same time, however, the central bank should be willing to provide liquidity when doing so will prevent the failure of basically sound banks

(Kane 1981; Thomson 1990; Hoskins 1990).

For the foreseeable future, financial supervisors in the countries we studied will continue to be under pressure. Technical assistance from either the IMF, the bilateral aid agencies, or the central banks in developed countries can deal with supervisory bottlenecks in the medium term. Malawi, The Gambia, and Senegal are making extensive use of technical assistance while they build up their local supervisory capacity. For Ghana and Nigeria, where the problem banks have been identified and measures established to limit the financial damage, the main issue seems to be how to rehabilitate the insolvent organizations.

A further area in which the central bank should change is in the way its staff view formal and informal financial activity. As noted above, a key to improving monetary management is the need to convince the people who control large volumes of financial resources that the situation has changed. Until a significant number of people are convinced that the attempts being made to improve monetary policy are not gimmicks, there is little chance that the financial markets needed to broaden and deepen the financial system can be developed.

Thus, an initial step along the path to improved monetary management will be a special effort to reintegrate the parallel markets into the formal economic system. A problem, however, is that many central banks have little information on how these markets operate or the price and quantity combinations which emerge from them. Having treated them as illegal at worst, or highly irregular at best, the staffs of central banks and finance ministries have typically ignored them⁷⁹. Nonetheless, improvements in the whole financial system will only emerge when efforts are made to understand their operations and, where appropriate, take advantage them. This will be especially difficult in the countries such as Senegal and Malawi where attempts continue to suppress these informal markets.

F. Overview

The process of restoring confidence in the financial system and the central bank's capacity to conduct constructive monetary policy will be involved and time-consuming. Numerous set-backs will occur. The donor community can make an important contribution through the provision of technical assistance, financial resources, and conditions attached to their support. Technical assistance can supplement the local financial reform effort. In areas such as the training of bank supervisors, providing managers for banks which have been rehabilitated, and specialized advice on financial markets, technical assistance may often fill a critical gap until the local supply of competent staff increases. The financial resources provided by the donors

reduce the severity of the economic adjustment required and/or extend the time over which the adjustment can occur. Finally, while there are some political costs in acceding to donor demands, conditionality can play a constructive role in the reform process, especially when the conditions are supplemented by appropriate technical assistance⁸⁰.

IX. The Transition to Indirect Controls -- Issues and Options

Improvements in monetary management will have to occur at two levels. First, measures are needed to increase the capacity of the central bank and to improve the efficiency of financial markets. These changes should occur irrespective of whether monetary management is direct or indirect. Second, a strategy for moving towards a more market-oriented approach to monetary control has to be developed.

Both sets of changes have been occurring in the countries we have studied and considerable progress has already been made. In this section, we discuss options available and the additional changes that will be needed.

A. Central Bank Capacity and Efficient Markets

Several steps will be needed if the central bank is to improve its impact on and management of the financial system. First, data have to be timely and accurate. Second, the data have to be analyzed in a meaningful way. Third, a system for monitoring the implementation of the monetary program has to be established. If monitoring leads to corrective actions, the links among those who monitor the data, analyze it, and convey it to policy makers have to be regularized. In this area, close cooperation between the central bank and the ministry of finance will be essential. Fourth, procedures for ensuring that all financial institutions comply with the relevant regulations will be required. Fifth, attention has to be paid to the state of the financial markets themselves. In this respect, attempts should be made to obtain details on a regular basis of parallel market activity and off-shore transactions. And sixth, special efforts should be made to rationalize the internal operations of the central bank itself. Each of these points is discussed in turn.

It is difficult to overstate the importance of timely, accurate data for the conduct of monetary policy. Without appropriate data the central bank's policy initiatives may be counterproductive. At best it will be an exercise in adaptation and reaction; at worst, it will degenerate into ad hocery. Monetary policy, most specialists agree, operates with "long and variable" lags. The persistence of long lags in the collection and analysis of data when computers are so inexpensive and communications are so rapid would be inexcusable. Minimum

requirements would be financial data on a weekly basis; prices, trade data, government expenditure and revenue on a monthly basis; and estimates of the output of major sectors semi-annually.

Analyzing the data requires skilled staff who have training in macroeconomic and financial management. Central banks generally tend to invest heavily in training and in some cases a small core of technically qualified staff exists. Nonetheless, if the transition to indirect controls is to proceed smoothly considerably more training will be needed.

Implementing the monetary program requires a formal framework for tracking the interactions of all the macroeconomic and financial data. Such a framework, which could readily be based on the accounting system used by the IMF, should be regularly updated even if all of the data are not current³¹. This approach would provide a useful means of organizing the data on a regular basis and determining where additional effort is needed to fill the gaps. In this respect, priority should be given to obtaining data which reliably signal deviations from the annual projections. A common mistake we have found is an over-emphasis on "complete" data, even when this was at the expense of timeliness and relevance to current policy decisions.

Ensuring that financial institutions comply with existing regulations may require some arm-twisting initially. For small countries such as The Gambia and Malawi, this has been relatively easy because there are so few banks and the state-owned banks have either been shut or are being restructured. In Nigeria, considerable effort has been devoted to the training of bank supervisors so that the central bank's capacity in this area is relatively well developed. The situation in Ghana is dominated by the need to mobilize resources to rehabilitate the banks. The problem there is more one of easing the banks out from under supervisory restraint. At the same time, the bank supervision staff is being expanded and retrained. In Senegal, the BCEAO has only recently taken over financial supervision.

The financial markets in all five countries are fragile and, with the exception of Nigeria, generally lacking in dynamism. In Malawi, the central bank has forced its own paper on the market and T Bills have yields which are negative in real terms. The BCEAO has been encouraging an interbank market but it remains undeveloped largely because of the BCEAO's willingness to rediscount government debt at little or no penalty. The Gambia has a large T Bill market but there is no secondary trading and investors still find off-shore accounts generally more attractive. Finally, in Ghana, the central bank is still manipulating the Bill rate. That is, the development of robust and efficient financial markets in local assets is proving to be a protracted process.

Finally, the central banks themselves need reorganization. Years of presiding over a system of direct controls have left most senior staff members poorly equipped to participate in the management of an indirect control system. Refresher courses for all staff and special seminars on what improved monetary management entails would be a useful (and productive) investment. The staff would also benefit from a system of regular debates about the course of monetary policy.

B. Competition, Control, and Stability

The strategy for moving towards an indirect control system requires attention to three areas of institutional development and performance: competition; reserve control; and macroeconomic stability.

Promoting competition while at the same time ensuring that depository institutions do not take excessive risks has always been difficult. Achieving an appropriate balance between trade-oriented oligopoly and wild-cat banking is a challenge. On the one hand, an uncompetitive financial system will undermine the value of introducing indirect controls. On the other hand, the efforts to promote competition may expose banks to additional risks which, under a system of indirect controls, could lead to instability. Thus, the viability of an indirect control system may depend as much on the effectiveness of supervision and the enforcement of reserve and capital requirements as on the central bank's facility in reserve management.

Reserve control works more smoothly and flexibly in conjunction with well-developed interbank markets and secondary markets for short-term securities. Nonetheless, some of the benefits of indirect control of money and credit can be obtained while the financial infrastructure is being strengthened. The use of an indirect control system is likely to encourage the development of short-term financial markets. In this regard, the Gambian experience described earlier [section VI.C.b] illustrates some of the preconditions for successfully introducing an indirect control system. It took several years of preparation and it was introduced when the macroeconomic setting was stable. It remains to be seen, however, how the system will respond to adverse changes in the balance of payments, import prices, or fiscal policy.

Other countries seeking to move towards indirect controls will face similar problems. Auction market participants need to acquire some experience before being prepared to make significant portfolio shifts in response to changing market conditions. For its part the central bank must be prepared to determine the size of the auction and accept enough bids to dispose of that amount at competitive prices. This will be difficult until the macro economy begins to stabilize. It may seem paradoxical that

improved stabilization methods cannot be tried until stability is achieved. Then again, one does not try out new steering gear in a traffic jam.

Nonetheless an indirect control system, once established, must work in a wide range of conditions. Its viability depends critically on the ability of the central bank staff to diagnose and respond to changing circumstances affecting the economy. At the same time the government has to accept that there are limits to the capacity of any financial system to deal with macroeconomic imbalances.

Accordingly, an agreement on the roles of monetary and fiscal policy in dealing with variations in macroeconomic conditions is a necessary part of the preparations for moving to indirect controls. A market-oriented system of monetary control cannot induce all the adjustment required by adverse trade developments, nor can monetary policy adequately offset instability in fiscal policy. Interest rates in SSA need to be more responsive to changing conditions than they have been in the past but excessive volatility can cause either destabilizing speculation or unfortunate political decisions.

X. Concluding Observations

After the financial disasters and indifferent economic performance of the 1980s, many countries in SSA have taken steps to promote financial reform. The main objective so far has been to improve the efficiency of the financial system in allocating resources. Most countries have continued to rely on credit ceilings for macroeconomic control.

Direct controls are often counterproductive. The deficiencies of these systems have increased the attractiveness of proposals for indirect controls which rely on the central bank's ability to manipulate reserve money. Such indirect systems have been successful in developed countries and in some developing countries of Asia as well.

The successful operation of an indirect control system requires the completion of a number of financial reforms, the training of staff, and cooperation between the central bank and the ministry of finance (and other economic ministries if applicable). But all of those conditions are contingent on commitments by the government to:

- the fiscal responsibility and disciplined control of money and credit required for macroeconomic stability
- a market-oriented financial system
- a working relationship between the central

bank and the government which gives the central bank a day-to-day operational role in macroeconomic decision-making free of political interference.

Even with these commitments, however, there have to be concomitant changes in the operation of financial institutions and financial markets. These include:

- restructuring the insolvent and illiquid banks
- effective enforcement of reserve requirements
- curtailment of special credit allocation programs and the elimination of open-ended refinancing from the central bank
- elimination of interest rate ceilings
- effective financial supervision
- development of competitive markets for short-term securities
- removal of barriers to entry and other restrictions on bank competition
- a realistic exchange rate
- data management systems to support effective monetary control
- recruitment and training of enough staff to deal with the requirements of an indirect control system.

The central banks of the countries we have studied have all taken action to improve their financial systems. Nonetheless, merely stating the tasks which have to be accomplished suggests that it will be some time before the full benefits from indirect monetary management will materialize.

The above considerations also suggest that at least for some countries indirect monetary control will not be advisable without further improvement in their financial markets. Fortunately, most of the changes required for indirect control are desirable even with a ceiling system. Continued efforts to improve the microeconomic efficiency of the financial system, and to improve the capacity of the government and the central bank to implement macroeconomic policy are important whatever system of control is used. Nonetheless, it will not be sufficient to make some improvements and then let the financial system become rigid again.

For most countries a move to indirect controls will, sooner or later, prove to be desirable but only after detailed preparation. The financial institutions and markets should be reformed and improvements in the government and central bank cooperation to formulate, implement, and monitor monetary policy should be made. Some countries may find it advisable to wait several years before proceeding to the full implementation of indirect controls. The

delay, however, need not deter them from developing the bill auction, improving reserve management techniques, strengthening financial supervision, or rationalizing the distribution of the aggregate credit ceilings.

Annex A: Basic Data Tables

Extensive data bases exist for the countries studied. Both the International Monetary Fund and the World Bank provide relatively detailed accounts of the major production, expenditure, income and monetary data. The basic sources are the World Tables and the International Financial Statistics.

The following tables are intended to provide an overview of the recent trends in the major macroeconomic variables.

The data reported cover the major variables from GNP per capita, aggregate GDP, the resource balance, and domestic absorption. Balance of payments data, external debt and the monetary survey are also presented.

11901

TABLE A1: GHANA -- BASIC DATA SET 1971 TO 1988

	1971	1975	1980	1981	1982	1983	1984	1985	1986	1987	1988
GNP per capita (US\$)	270.0	280.0	400.0	410.0	380.0	340.0	370.0	370.0	390.0	390.0	400.0
	(millions of constant 1980 cedis)										
GDP at market prices	43154.1	40151.7	42852.0	41593.4	38895.5	37164.2	40398.2	42211.2	44334.6	46267.4	49003.5
Resource Balance	1863.8	1128.4	-295.0	-80.5	1718.8	192.8	292.9	-22.1	802.9	151.4	-114.6
a. Exports of Goods & NF Services	6365.9	5664.1	3628.0	3306.7	3810.8	2067.7	2263.8	2410.0	3412.0	4414.5	4763.5
b. Imports of Goods & NF Services	4502.1	4535.7	3923.0	3387.2	2092.0	1874.8	1970.8	2432.1	2609.1	4263.1	4878.1
Domestic Absorption	41290.4	39023.3	43147.0	41673.9	37176.7	36971.4	40105.3	42233.3	43531.7	46116.0	49118.1
a. Private Consumption	34334.6	32362.5	35953.0	33941.1	30564.3	30461.4	33973.0	35755.5	37054.5	37919.3	40606.1
b. General Government Consumption	3056.0	3354.2	4784.0	5534.2	4920.4	4823.0	4199.4	4067.9	4140.9	5358.9	5315.0
c. Gross Domestic Investment	3899.8	3306.6	2410.0	2198.5	1691.9	1687.0	1932.9	2410.0	2336.2	2837.9	3196.9
Broad Money Supply	8191.6	10534.7	7984.7	6889.0	6675.6	4201.1	4764.6	5749.3	5996.2	6572.3	7180.5
	(millions of US\$)										
Current Account Balance before off. tr.	-154.9	-2.7	-53.7	-508.0	-192.3	-248.3	-180.0	-243.7	-165.5	-220.1	-263.6
Official Transfers (net)	9.0	20.3	82.9	87.2	83.7	74.2	141.2	109.5	122.5	123.2	173.7
Current Account Balance after off. tr.	-145.8	17.6	29.2	-420.8	-108.6	-174.1	-38.8	-134.2	-43.0	-96.9	-89.9
Long-Term Capital Inflow (net)	65.0	92.4	64.1	93.7	128.1	33.8	204.2	45.1	146.3	232.4	191.8
Other Capital Inflows (net)	86.9	-112.5	-189.0	291.1	-20.7	-115.4	-232.7	149.5	-133.5	-69.7	25.6
Change in Reserves (- = increase)	-6.0	2.5	95.7	35.9	1.3	255.7	67.3	-60.4	30.2	-65.8	-127.5
Long-Term Debt (by debtor)	555.7	723.4	1183.6	1175.9	1191.1	1508.6	1659.1	1991.0	2471.5	3024.6	3032.1
a. Central Bank, incl. IMF credit	19.9	45.2	105.2	85.2	75.4	331.4	514.7	700.8	785.6	866.7	761.7
b. Central Government	353.6	514.3	854.7	843.0	848.3	913.8	907.4	998.1	1272.1	1649.2	1809.8
c. Rest of General Government	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
d. Non-financial Public Enterprises	172.0	86.4	168.7	195.4	209.3	214.4	181.5	219.1	236.3	276.0	255.3
e. Private sector, incl. non-guarantee	10.2	77.5	55.0	52.3	58.1	49.0	55.5	73.0	177.5	232.7	205.3
Short-Term Debt	0.0	0.0	130.9	285.9	206.0	89.8	238.3	183.1	180.0	108.3	66.7
Conversion Factor (Ann. ave, c/US\$)	1.0	1.1	2.8	2.8	2.8	8.8	36.0	54.4	89.2	153.7	202.3
GDP Deflator (Index)	5.8	13.2	100.0	174.6	222.3	495.2	670.8	812.6	1152.6	1632.4	2158.8

1991

TABLE A2: THE GAMBIA -- BASIC DATA SET 1971 TO 1988

	1971	1975	1980	1981	1982	1983	1984	1985	1986	1987	1988
GNP per capita (US\$)	120.0	210.0	360.0	380.0	370.0	300.0	260.0	210.0	180.0	190.0	200.0
	(millions of constant 1980 dalasis)										
GDP at constant market prices	275.0	361.8	409.4	451.0	508.4	481.6	497.0	498.6	524.7	553.7	582.1
Resource Balance	-49.3	28.7	-91.4	-136.4	-67.9	-38.9	-63.8	-50.7	-39.7	-30.5	-23.9
a. Exports of Goods & NF Services	114.4	202.1	241.2	175.0	197.4	219.0	262.2	270.1	301.4	313.0	346.0
b. Imports of Goods & NF Services	163.7	173.5	332.6	311.4	265.3	257.8	326.0	320.8	341.1	343.5	369.9
Domestic Absorption	324.3	333.1	500.8	587.4	576.3	520.4	560.8	549.3	564.5	584.1	606.0
a. Private Consumption	276.3	252.2	307.3	394.2	396.5	339.8	0.0	0.0	0.0	0.0	0.0
b. General Government Consumption	36.1	39.2	91.1	93.3	97.4	92.0	0.0	0.0	0.0	0.0	0.0
c. Gross Domestic Investment	11.9	41.7	102.3	100.0	82.4	88.7	112.4	111.2	114.5	117.9	121.9
Broad Money Supply	47.1	78.4	90.7	107.2	122.3	129.5	125.4	149.1	134.2	152.1	154.1
	(millions of US\$)										
Current Account Balance before off. tr.	-2.7	6.7	-111.6	-97.9	-53.7	-51.9	-1.9	-0.7	-2.9	-30.9	-21.4
Official Transfers (net)	1.8	4.6	37.7	51.4	31.9	19.4	9.8	8.2	7.3	37.8	42.1
Current Account Balance after off. tr.	-1.0	11.3	-74.0	-46.5	-21.8	-32.5	7.9	7.5	4.4	6.9	20.8
Long-Term Capital Inflow (net)	1.7	1.9	3.7	13.3	17.3	-5.4	-9.9	2.0	-10.3	19.9	23.6
Other Capital Inflows (net)	0.9	0.9	63.8	42.5	-20.0	29.0	3.9	-8.9	8.7	-11.9	-66.1
Change in Reserves (- = increase)	-1.7	-14.1	6.4	-9.3	24.6	8.9	-1.9	-0.6	-2.8	-14.9	21.7
Long-Term Debt (by debtor)	5.5	13.4	113.5	157.6	186.8	186.8	184.6	209.6	241.6	303.4	305.6
a. Central Bank, incl. IMF credit	0.0	0.0	16.2	25.3	40.0	35.1	32.9	33.0	29.5	37.8	34.5
b. Central Government	5.5	13.4	82.7	117.4	121.4	125.6	126.7	150.2	192.8	248.8	264.0
c. Rest of General Government	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
d. Non-financial Public Enterprises	0.0	0.0	4.2	3.5	3.1	2.7	2.3	3.0	1.2	1.3	1.0
e. Private sector, incl. non-guaran.	0.0	0.0	10.4	11.4	22.3	23.4	22.7	23.4	18.1	15.5	6.1
Short-Term Debt	0.0	0.0	23.3	18.5	19.9	24.9	45.4	36.1	28.5	23.5	21.6
Conversion Factor (Ann. ave, D/US\$)	2.0	2.0	1.8	2.2	2.5	2.9	4.1	5.0	7.3	6.7	7.0
GDP Deflator (Index)	41.2	61.1	100.0	102.3	103.8	124.3	135.4	172.4	205.4	225.9	255.9

TABLE A3: MALAWI -- BASIC DATA SET 1971 TO 1988

	1971	1975	1980	1981	1982	1983	1984	1985	1986	1987	1988
GNP per capita (US\$)	80.0	120.0	180.0	180.0	190.0	180.0	180.0	170.0	150.0	150.0	160.0
	(millions of constant 1980 kwacha)										
GDP at market prices	642.6	796.6	1014.9	961.7	983.4	1022.8	1077.4	1127.3	1137.2	1138.4	1175.4
Resource Balance	-198.5	-206.1	-140.4	-97.8	-104.4	-103.4	-21.8	-87.8	-17.6	-20.6	-111.3
a. Exports of Goods & NF Services	147.6	186.7	249.7	205.0	184.6	190.7	253.1	239.4	228.9	242.0	231.1
b. Imports of Goods & NF Services	346.1	392.8	390.1	302.8	288.9	294.1	274.9	327.2	246.5	262.6	342.5
Domestic Absorption	841.1	1002.7	1155.3	1059.5	1087.7	1126.3	1099.3	1215.0	1154.8	1159.0	1286.8
a. Private Consumption	553.6	594.8	714.3	697.1	682.1	698.5	757.5	795.8	808.9	801.7	906.7
b. General Government Consumption	97.9	115.1	192.3	186.5	189.7	189.5	204.5	226.3	248.3	243.8	231.6
c. Gross Domestic Investment	189.6	292.8	248.7	175.9	215.9	238.3	137.3	192.9	97.7	113.5	148.4
Broad Money Supply	141.5	209.2	219.0	238.1	250.9	248.1	286.2	236.5	296.0	327.1	0.0
	(millions of US dollars)										
Current Account Balance before off. tr.	-40.8	-86.4	-314.6	-198.1	-158.7	-174.4	-24.4	-98.3	-46.5	-20.1	-133.5
Official Transfers (net)	7.7	6.8	50.2	47.4	37.3	30.5	25.3	25.2	29.2	30.3	80.5
Current Account Balance after off. tr.	-33.1	-79.6	-264.4	-150.7	-121.4	-144.0	0.8	-73.1	-17.4	10.1	-53.0
Long-Term Capital Inflow (net)	32.1	57.2	180.9	51.3	9.4	96.2	73.2	5.8	37.5	88.2	124.7
Other Capital Inflows (net)	-0.4	4.1	66.8	74.2	93.8	9.4	-47.4	46.7	-20.9	-33.9	-11.3
Change in Reserves (- = increase)	1.4	18.4	16.7	25.3	18.2	38.4	-26.6	20.6	0.7	-64.5	-60.4
Long-Term Debt (by debtor)	140.7	259.9	704.7	762.4	771.0	812.3	834.1	937.4	1076.0	1270.4	1298.6
a. Central Bank, incl. IMF credit	0.0	14.2	105.7	135.1	124.6	128.4	129.0	145.5	133.3	116.9	105.7
b. Central Government	124.9	216.1	414.1	456.8	496.5	567.9	627.3	723.3	882.1	1084.9	1130.9
c. Rest of General Government	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
d. Non-financial Public Enterprises	15.8	28.2	131.5	125.4	113.1	88.7	59.1	53.8	49.2	58.7	53.0
e. Private sector, incl. non-guarant.	0.0	1.4	53.4	45.1	36.8	27.3	18.7	14.8	11.4	9.9	9.0
Short-Term Debt	0.0	0.0	116.1	50.0	85.8	73.0	42.0	80.6	80.1	98.2	50.7
Conversion Factor (Ann. ave, K/US\$)	0.8	0.9	0.8	0.9	1.1	1.2	1.4	1.7	1.9	2.2	2.6
GDP Deflator (Index)	47.2	66.5	100.0	114.8	126.5	140.3	158.5	172.4	196.2	238.9	260.2

TABLE A4: NIGERIA -- BASIC DATA SET 1971 TO 1988

	1971	1975	1980	1981	1982	1985	1984	1985	1986	1987	1988
GNP per capita (US\$)	190.0	430.0	1020.0	1090.0	1120.0	990.0	910.0	950.0	700.0	370.0	280.0
(millions of constant 1980 naira)											
GDP at constant market prices	39033.8	46396.6	56490.8	53251.0	53146.3	49851.9	46158.4	49684.8	50823.8	48675.9	50952.2
Resource Balance	5408.7	3140.0	5114.5	-4932.7	-4533.0	-2638.8	-282.4	924.2	2316.3	2797.4	3475.5
a. Exports of Goods & NF Services	8333.9	9183.6	14759.8	6577.6	5277.3	4949.5	5718.7	6485.0	6300.9	5603.6	6209.1
b. Imports of Goods & NF Services	2925.2	6043.6	9645.3	11510.3	9810.3	7588.3	6001.1	5560.8	3984.6	2806.2	2733.6
Domestic Absorption	33625.0	43256.6	51376.3	58184.3	57679.4	52490.7	46440.8	48760.6	48507.5	45878.6	47476.7
a. Private Consumption	25263.2	27702.7	34759.5	39252.9	41298.3	38627.0	37246.2	39423.0	38708.1	36031.2	37778.3
b. General Government Consumption	2649.5	4579.4	5051.0	6394.0	7064.4	6788.3	5384.9	4432.1	4972.6	6066.8	5549.1
c. Gross Domestic Investment	5712.4	10974.5	11565.8	12537.4	9316.7	7075.5	3809.6	4905.6	4826.8	3780.5	4149.3
Broad Money Supply	3585.1	7650.7	14389.9	13795.5	14144.7	14591.7	13751.0	14264.1	14669.3	14236.9	14332.4
(millions of US dollars)											
Current Account Balance before off. tr.	-433.3	57.1	5298.8	-6187.6	-7242.9	-4325.9	149.8	2523.2	379.8	-61.9	-1045.2
Official Transfers (net)	27.1	-14.6	-168.2	-117.6	-39.7	-19.7	-26.1	-2.1	-5.5	-5.2	21.7
Current Account Balance after off. tr.	-406.2	42.5	5130.6	-6305.1	-7282.6	-4345.6	123.6	2521.2	374.4	-67.0	-1023.5
Long-Term Capital Inflow (net)	309.9	208.8	-82.2	1344.5	1526.7	1859.5	-51.4	-526.1	-1082.6	-1759.1	-2017.6
Other Capital Inflows (net)	256.8	-62.7	-704.5	231.9	3656.8	2048.1	409.0	-1494.5	168.7	3636.1	2584.8
Change in Reserves (- = increase)	-160.5	-188.6	-4343.9	4728.8	2099.1	437.9	-481.2	-500.6	539.6	-1810.0	456.3
Long-Term Debt (by debtor)	651.0	1143.5	5302.0	7590.5	10282.4	13366.4	12690.6	14349.9	19445.6	28377.5	28966.8
a. Central Bank, incl. IMF credit	0.0	0.0	0.0	0.0	37.5	2382.9	1962.7	905.4	258.5	258.5	0.0
b. Central Government	278.1	767.8	3552.7	4945.8	6639.8	6474.9	5718.8	8045.8	14553.3	24128.2	25172.1
c. Rest of General Government	9.2	2.1	169.1	546.0	1457.0	2138.0	2584.2	2781.7	2904.1	2385.1	2297.5
d. Non-financial Public Enterprises	247.0	265.9	453.5	710.6	783.6	1019.3	975.5	1120.1	1192.7	1068.9	992.5
e. Private sector, incl. non-guarantee	116.7	107.7	1126.7	1388.1	1364.5	1351.3	1449.4	1496.9	537.0	536.8	504.7
Short-Term Debt	0.0	0.0	3553.1	4427.2	2532.7	5055.5	5744.3	4973.9	3718.1	1661.6	1751.6
Conversion Factor (Ann. ave, N/US\$)	0.7	0.6	0.5	0.6	0.7	0.7	0.8	0.9	1.8	4.0	4.5
GDP Deflator (Index)	29.1	54.6	100.0	110.5	118.0	130.4	154.5	162.3	160.9	203.0	268.0

290

TABLE A5: SENEGAL -- BASIC DATA SET 1971 TO 1988

	1971	1975	1980	1981	1982	1983	1984	1985	1986	1987	1988
GNP per capita (US\$)	200.0	340.0	490.0	470.0	490.0	420.0	370.0	570.0	410.0	510.0	630.0
	(millions of 1980 CFA francs)										
GDP at constant market prices	538301.0	603361.9	637299.9	632056.6	727597.7	746071.7	713625.0	740328.0	772636.3	803540.8	844470.4
Resource Balance	-43535.8	-27604.4	-100099.9	-126689.8	-103122.1	-94610.3	-81124.5	-87864.3	-64607.4	-64545.6	-47292.1
a. Exports of Goods & NF Services	118294.6	141790.1	180200.0	196544.7	205942.9	226067.3	209722.6	183060.3	192254.2	195066.7	205840.8
b. Imports of Goods & NF Services	161830.3	169394.4	280299.9	323234.5	309065.0	320677.6	290847.1	270924.6	256861.7	259612.2	253132.9
Domestic Absorption	581836.7	630966.3	737399.8	758746.4	830719.9	840682.0	794749.6	828192.3	837243.7	868086.3	891762.5
a. Private Consumption	410097.2	442844.2	499799.8	516353.8	574173.1	575665.0	540989.1	593823.7	596744.2	612095.5	635103.1
b. General Government Consumption	77671.9	86698.2	140300.0	140077.1	143643.1	145983.3	142751.6	134616.6	129267.7	135173.8	135619.6
c. Gross Domestic Investment	94067.7	101423.8	97300.0	102315.5	112903.7	119033.7	111008.9	99752.0	111231.8	120817.0	121039.8
Broad Money Supply	82848.7	127831.3	177692.0	204727.1	226208.0	216839.0	201726.0	192847.7	199182.3	193476.5	190446.0
	(millions of US dollars)										
Current Account Balance before off. tr.	-93.7	-179.0	-526.3	-638.8	-447.8	-445.4	-410.9	-453.6	-446.0	-465.6	-467.2
Official Transfers (net)	68.2	93.4	140.2	177.2	182.2	157.6	138.7	133.0	202.0	213.0	205.0
Current Account Balance after off. tr.	-25.5	-85.6	-386.1	-461.5	-265.6	-287.8	-272.3	-320.6	-244.0	-252.6	-262.2
Long-Term Capital Inflow (net)	25.7	49.4	281.9	241.7	188.1	246.8	236.0	246.0	280.0	142.4	106.6
Other Capital Inflows (net)	1.2	31.7	57.8	160.0	-60.6	21.2	10.0	61.5	-42.2	166.8	157.8
Change in Reserves (- = increase)	-1.5	4.5	46.3	59.9	138.0	19.8	26.2	13.1	6.2	-56.6	-2.2
Long-Term Debt (by debtor)	151.3	342.3	1089.5	1304.2	1609.1	1732.3	1787.1	2183.6	2732.0	3390.0	3337.0
a. Central Bank, incl. IMF credit	0.0	29.8	140.1	186.5	220.7	230.8	230.0	267.7	289.0	342.8	318.3
b. Central Government	98.6	229.8	691.4	908.7	1187.3	1286.5	1345.5	1674.1	1979.1	2393.4	2357.4
c. Rest of General Government	0.2	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
d. Non-financial Public Enterprises	14.5	56.9	197.5	161.9	161.6	165.6	157.6	183.5	267.7	366.3	335.9
e. Private sector, incl. non-guarantee	38.0	25.8	60.3	47.0	39.5	49.4	54.0	58.3	196.2	287.5	325.4
Short-Term Debt	0.0	0.0	219.0	237.0	202.0	192.0	273.5	225.0	273.4	321.3	280.2
Conversion Factor (Ann. ave, CFAF/US\$)	277.1	214.3	211.3	271.7	328.6	381.1	437.0	449.3	346.3	300.5	297.8
GDP Deflator (Index)	45.9	67.4	100.0	106.0	116.0	125.9	142.3	155.6	167.5	172.0	175.6

1064

TABLE A6: GHANA -- MONETARY SURVEY 1971 TO 1988

	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
(billions of cedis)																		
MONETARY AUTHORITIES																		
Foreign Assets	0.1	0.2	0.2	0.1	0.2	0.1	0.3	0.8	0.8	0.6	0.5	0.6	6.5	19.7	31.9	91.8	57.5	77.1
Claims on Central Government	0.4	0.3	0.3	0.6	0.9	1.5	2.5	4.3	4.4	5.7	9.5	10.2	24.3	35.1	45.0	78.6	161.7	160.2
Claims on Nonfin.Pub.Enterprises	0.1	0.2	0.1	0.2	0.1	0.1	0.1	0.6	1.1	1.4	2.2	5.0	0.2	3.5	12.5	15.9	15.1	1.2
Claims on Other Financial Insts.	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	1.0	2.8	3.8	4.8	6.2
Reserve Money	0.2	0.4	0.4	0.6	0.9	1.3	2.0	3.7	4.4	5.7	8.9	10.2	14.6	21.8	29.6	47.3	67.0	103.0
of which: Currency Outside DMBs	0.2	0.2	0.3	0.3	0.5	0.7	1.2	2.1	2.5	3.5	6.1	7.0	10.4	17.6	22.6	32.4	49.0	67.9
Nonfin.Pub.Ent. Deps.	--	--	0.0	0.0	0.0	0.0	0.1	0.2	0.4	0.5	0.1	0.2	0.9	0.4	2.5	5.1	10.0	21.7
Restricted Deposits	0.1	0.2	0.2	0.1	0.2	0.2	0.3	0.5	0.7	0.5	0.7	1.8	3.5	5.7	8.3	12.9	15.7	5.9
Foreign Liabilities	0.1	0.0	0.0	0.1	0.1	0.1	0.2	0.5	0.5	0.3	0.6	0.4	13.0	37.4	63.3	145.6	184.4	223.2
Central Government Deposits	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.3	0.5	1.9	0.6	1.4	1.2	6.9	8.9	14.1
Other Items (Net)	0.1	0.1	0.1	0.1	0.1	0.2	0.4	1.0	0.7	0.9	1.5	1.5	-0.6	-7.2	-10.1	-22.5	-36.9	-101.4
DEPOSIT MONEY BANKS																		
Reserves	0.1	0.1	0.2	0.2	0.4	0.5	0.7	1.4	1.7	1.9	2.8	3.4	4.3	8.8	10.9	20.2	18.5	23.8
Foreign Assets	0.0	--	0.0	--	--	0.0	0.0	0.0	--	--	0.0	0.0	0.9	0.5	0.5	0.4	4.8	6.4
Claims on Central Government	0.1	0.1	0.1	0.1	0.2	0.2	0.4	0.6	0.9	1.3	2.0	3.0	4.9	4.4	5.2	6.2	5.9	5.1
Claims on Nonfin.Pub.Enterprises	--	0.0	0.2	0.2	0.2	0.3	0.3	0.5	0.5	0.6	1.2	1.1	1.2	0.8	3.8	4.3	5.0	6.9
Claims on Private Sector	0.3	0.3	0.2	0.3	0.3	0.4	0.6	0.7	0.8	0.9	1.3	1.6	2.8	6.0	10.7	18.6	23.5	33.0
Demand Deposits	0.2	0.2	0.3	0.3	0.5	0.7	1.1	1.8	1.9	2.1	3.3	4.1	5.5	8.8	13.2	17.7	25.2	32.4
Time and Savings Deposits	0.2	0.2	0.2	0.3	0.4	0.5	0.7	1.0	1.3	1.9	2.6	3.6	4.1	5.1	8.4	14.0	21.8	33.0
Foreign Liabilities	--	0.0	--	0.0	--	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.6	2.3	2.6	8.7	13.0
Central Government Deposits	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.6	0.6	1.0	1.3	1.8	3.0
Other Items (Net)	0.1	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.6	0.5	1.0	1.0	3.8	5.3	6.0	14.0	0.3	-6.1
MONETARY SURVEY																		
Foreign Assets (Net)	--	0.1	0.2	0.0	0.2	0.0	0.1	0.3	0.3	0.2	-0.2	0.0	-5.8	-17.9	-33.2	-56.0	-130.8	-152.6
Domestic Credit	0.7	0.8	0.8	1.3	1.6	2.4	3.9	6.5	7.4	9.5	15.5	18.8	32.4	48.7	77.8	119.1	205.4	195.6
Claims on Central Govt. (Net)	0.3	0.4	0.4	0.6	0.9	1.6	2.8	4.5	4.9	6.5	10.7	11.1	28.1	37.5	48.1	76.6	156.9	148.2
Claims on Nonfin.Pub.Enterprises	0.1	0.2	0.2	0.3	0.3	0.4	0.4	1.1	1.6	2.0	3.4	6.1	1.3	4.3	16.3	20.2	20.1	8.1
Claims on Private Sector	0.3	0.3	0.2	0.3	0.3	0.4	0.6	0.7	0.8	0.9	1.3	1.6	2.8	6.0	10.7	18.6	23.5	33.0
Claims on Other Financial Insts.	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	1.0	2.8	3.8	4.8	6.2
Money	0.3	0.5	0.6	0.7	1.0	1.4	2.4	4.1	4.7	6.1	9.4	11.2	16.7	26.9	38.3	55.2	84.2	122.0
Quasi-Money	0.2	0.2	0.2	0.3	0.4	0.5	0.7	1.0	1.3	1.9	2.6	3.6	4.1	5.1	8.4	14.0	21.8	33.0
Restricted Deposits	0.1	0.2	0.2	0.1	0.2	0.2	0.3	0.5	0.7	0.5	0.7	1.8	3.5	5.7	8.3	12.9	15.7	5.9
Other Items (Net)	0.2	0.1	0.1	0.2	0.2	0.4	0.6	1.1	1.1	1.3	2.5	2.2	2.3	-6.9	-10.4	-18.8	-47.1	-118.0

1901

TABLE A7: THE GAMBIA -- MONETARY SURVEY 1971 TO 1988

	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
(millions of dalasis)																		
MONETARY AUTHORITIES																		
Foreign Assets	21.0	21.9	28.0	47.8	56.4	48.5	51.2	51.3	12.4	9.5	8.3	23.2	8.0	15.4	10.7	102.6	134.7	187.1
Claims on Central Government	0.0	-0.7	-1.1	0.7	-2.3	3.6	20.6	17.0	41.9	15.0	60.0	33.9	80.0	95.5	141.4	23.8	21.6	35.2
Claims on Official Entities	....	....	....	....	....	....	....	3.1	3.1	9.1	21.3	39.3	76.2	94.1	113.4	109.0	46.9	43.7
Claims of Deposit Money Banks	5.9	7.0	23.6	24.7	29.9	32.6	11.8	33.6	47.0	86.4	110.5	129.6	132.2	131.8	154.6	151.7	84.1	86.1
Reserve Money	14.9	16.3	48.3	69.4	82.3	69.0	59.0	42.7	50.4	55.8	76.2	89.6	120.8	57.4	103.6	106.9	126.2	155.3
of which: Currency Outside DMBs	12.7	14.9	25.2	24.1	27.2	32.1	19.8	34.5	36.5	36.8	42.6	55.9	57.2	58.4	85.7	91.2	95.0	112.0
Restricted Deposits	--	--	20.4	41.8	52.4	3.3	29.3	12.8	0.0	0.3	--	--	0.8	78.6	124.2	105.7	92.0	77.1
Foreign Liabilities	--	--	--	--	--	0.7	12.9	34.0	39.3	43.1	73.6	122.7	166.1	343.8	353.9	591.9	570.2	482.9
Central Government Deposits	9.7	8.1	2.8	3.3	5.6	13.1	9.2	3.5	2.3	4.1	28.6	4.9	17.3	13.7	26.8	112.7	165.7	189.2
Capital Accounts	4.6	6.1	6.1	6.1	6.8	10.9	10.9	12.2	13.7	13.1	16.9	18.9	23.3	30.7	29.4	55.5	56.8	56.7
Other Items (Net)	-1.6	-1.4	-5.7	-4.4	-6.5	-4.0	-6.9	-0.3	-1.4	3.6	4.9	-10.1	-31.8	-187.2	-217.9	-585.7	-723.7	-609.1
of which: Valuation Adjustment	--	--	-7.2	-7.2	-6.6	-4.9	-7.2	0.7	-2.9	2.6	-2.5	-8.3	-24.9	-93.3	-72.6	-430.0	-528.6	-516.9
DEPOSIT MONEY BANKS																		
Reserves	2.1	1.3	2.8	2.8	2.7	3.4	8.3	7.2	5.6	21.2	35.2	43.2	61.0	-1.8	14.7	19.4	28.5	25.6
Foreign Assets	0.4	1.8	2.0	5.2	4.8	2.9	4.6	6.2	11.4	16.7	16.4	9.3	5.7	22.4	18.6	27.2	32.9	30.6
Claims on Central Government	--	0.5	--	0.8	0.8	3.5	5.4	12.2	4.8	14.5	3.8	17.4	26.4	35.6	37.3	57.4	71.8	83.1
Claims on Official Entities	--	4.0	12.2	14.8	25.3	34.6	13.7	13.1	27.8	62.1	73.8	101.5	65.1	60.1	51.7	95.8	48.4	61.4
Claims on Private Sector	15.4	12.5	20.9	24.1	23.0	39.1	53.7	75.4	83.1	98.5	104.4	102.9	137.6	158.2	212.4	192.3	184.1	208.5
Demand Deposits	3.6	7.8	6.6	9.0	10.2	17.3	20.0	22.9	20.1	24.0	33.5	30.3	41.4	40.5	75.0	73.1	100.3	97.9
Time and Savings Deposits	3.1	4.3	6.6	9.2	10.6	20.5	21.7	31.9	24.4	29.4	32.7	39.8	60.6	70.2	94.9	109.2	145.7	180.7
Restricted Deposits	....	....	....	....	....	....	....	....	....	....	....	....	....	60.7	55.8	24.8	22.6	21.2
Foreign Liabilities	6.0	--	1.0	1.2	0.2	0.9	4.5	5.2	11.9	35.0	36.8	31.8	28.9	5.8	12.6	13.1	9.2	8.7
Credit from Monetary Authorities	5.9	7.0	23.6	23.2	29.9	32.6	17.9	33.1	47.0	86.2	101.3	130.8	131.6	128.8	149.7	140.9	85.3	84.8
Capital Accounts	1.0	1.3	1.4	1.9	4.4	8.4	12.0	16.6	19.3	22.8	25.6	30.3	21.1	20.2	15.1	36.7	51.8	49.6
Other Items (Net)	-1.8	-0.3	-1.3	3.1	1.2	3.9	9.8	4.3	9.9	15.6	3.6	11.3	12.1	-51.6	-68.4	-5.7	-49.1	-33.6
MONETARY SURVEY																		
Foreign Assets (Net)	15.4	23.7	28.9	51.8	61.1	49.9	38.4	18.2	-27.5	-51.8	-85.7	-121.9	-181.2	-311.8	-337.3	-475.2	-411.8	-273.9
Domestic Credit	10.8	12.1	30.4	38.3	45.1	72.5	84.2	117.4	158.7	195.6	235.5	291.4	369.2	428.3	526.8	363.2	205.7	241.6
Claims on Central Govt. (Net)	-9.1	-7.4	-2.8	-0.6	-3.1	-1.2	16.8	25.5	44.3	25.3	35.1	46.3	89.0	114.4	147.7	-35.6	-76.4	-75.0
Claims on Official Entities	4.6	6.9	12.2	14.8	25.3	34.6	13.7	16.2	30.9	71.2	95.1	140.9	141.2	154.3	165.1	204.8	95.3	105.2
Claims on Private Sector	19.9	15.5	20.9	24.1	23.0	39.1	53.7	75.7	83.5	99.0	105.3	104.3	139.0	159.7	213.9	194.0	186.8	211.5
Money	16.4	22.8	31.8	33.0	37.3	49.4	39.8	57.8	57.8	61.3	77.0	87.2	100.3	99.6	162.1	166.5	197.8	213.5
Quasi-Money	3.1	4.3	6.6	9.2	10.6	20.5	21.7	31.9	24.4	29.4	32.7	39.8	60.6	70.2	94.9	109.2	145.7	180.7
Restricted Deposits	....	....	....	....	....	....	....	....	....	....	....	....	....	17.9	68.5	80.9	69.5	55.8
Other Items (Net)	6.8	8.7	0.4	5.9	5.9	19.1	31.8	33.2	49.0	52.7	40.2	42.5	26.3	-71.2	-135.9	-468.5	-619.1	-482.3

TABLE A8: MALAWI -- MONETARY SURVEY 1971 TO 1988

	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
(millions of kwacha)																		
MCNETARY AUTHORITIES																		
Foreign Assets	24.5	28.4	56.5	72.6	55.3	23.8	76.2	60.9	51.6	56.5	44.5	24.9	20.0	92.4	76.9	42.2	106.5	378.8
Claims on Central Government	1.9	6.6	6.7	8.0	22.6	27.1	14.3	17.2	48.6	67.3	152.2	223.7	282.2	240.0	297.7	383.7	498.3	417.3
Claims on Official Entities	--	--	--	--	25.4	27.7	28.2	33.8	30.7	34.5	39.3	36.4	40.1	50.6	63.5	72.2	78.1	83.4
Claims on Deposit Money Banks	2.8	1.5	2.0	2.2	--	3.5	--	6.0	17.7	8.9	--	--	1.0	--	--	--	--	--
Reserve Money	18.7	21.7	45.4	59.2	52.5	34.6	63.7	41.7	38.6	53.3	71.8	84.8	89.6	158.1	166.0	286.4	445.3	495.7
of which: Currency Outside DMBs	14.8	17.3	21.3	28.3	27.8	23.1	24.6	29.8	32.3	35.3	39.4	49.5	50.0	56.9	66.0	79.3	107.6	134.6
Nonfin.Pub.Ent. Deps	1.1	0.6	2.0	4.2	4.2	6.4	21.6	1.9	1.5	0.4	1.5	0.9	6.2	9.7	3.4	17.4	34.0	70.3
Restricted Deposits	....	....	....	....	....	....	....	....	....	....	....	....	8.1	10.0	19.6	15.4	10.4	6.6
Foreign Liabilities	0.1	0.2	0.2	0.2	27.6	31.4	39.6	46.7	84.9	96.2	141.0	169.8	204.8	195.2	263.7	331.8	313.1	325.5
Central Government Deposits	2.7	3.4	5.2	5.5	8.2	2.7	5.8	7.7	8.4	0.3	0.8	26.8	36.6	31.9	33.2	-4.6	82.2	167.5
Other Items (Net)	....	....	....	....	....	....	49.3	21.8	16.7	17.3	22.5	3.5	4.2	-12.2	-44.4	-129.6	-168.1	-124.2
DEPOSIT MONEY BANKS																		
Reserves	2.9	3.8	22.2	26.6	20.7	5.1	17.5	9.9	4.8	17.6	30.9	34.4	33.4	91.6	96.4	189.7	303.8	288.2
Foreign Assets	1.9	2.6	3.5	2.2	5.2	5.7	5.7	10.8	6.6	5.7	6.5	9.0	13.7	9.5	13.0	10.4	6.3	14.8
Claims on Central Government	4.2	7.1	12.2	14.5	20.1	21.2	26.3	37.0	29.9	25.3	24.7	24.7	27.9	86.7	97.9	97.5	94.0	93.3
Claims on Official Entities	1.2	1.4	0.7	2.5	7.4	14.7	19.8	16.9	25.8	22.4	22.7	29.1	24.4	32.0	46.8	41.1	53.4	23.8
Claims on Private Sector	35.1	35.6	33.0	49.4	56.1	76.6	87.8	122.4	171.0	184.2	192.0	219.1	254.7	228.8	212.7	236.3	205.1	262.4
Demand Deposits	23.0	22.7	31.9	40.9	41.6	43.3	53.9	62.1	56.8	61.5	73.9	80.4	71.6	87.7	97.5	124.1	156.5	231.0
Time and Savings Deposits	17.8	22.3	29.7	42.5	48.7	48.2	60.9	74.8	79.5	94.3	126.7	145.6	165.0	234.0	217.5	268.0	370.4	376.6
Foreign Liabilities	5.4	5.3	7.8	6.9	11.3	22.4	31.8	32.2	55.3	46.6	29.7	32.7	48.1	51.2	68.6	99.3	57.3	45.5
Other Items (Net)	-0.9	0.2	2.1	5.0	7.8	9.2	10.5	27.9	46.5	52.8	46.6	57.6	69.4	75.5	83.2	83.6	78.4	30.2
MONETARY SURVEY																		
Foreign Assets (Net)	20.9	25.5	51.9	67.7	21.6	-24.4	10.5	-7.2	-82.0	-80.6	-119.7	-168.6	-219.3	-144.6	-242.4	-378.5	-257.6	22.6
Domestic Credit	39.7	47.3	47.3	68.9	123.3	164.5	17.1	219.6	297.6	333.4	430.1	506.2	592.7	606.3	685.3	835.4	846.8	712.6
Claims on Central Govt. (Net)	3.4	10.3	13.6	17.0	34.4	45.5	34.9	46.5	70.1	92.2	176.1	221.6	273.5	294.8	362.4	485.8	510.2	343.1
Claims on Official Entities	1.2	1.4	0.7	2.5	32.8	42.4	47.9	50.7	56.5	56.9	62.0	65.5	64.5	82.6	110.2	113.3	131.6	107.1
Claims on Private Sector	35.1	35.6	33.0	49.4	56.1	76.6	87.8	122.4	171.0	184.2	192.0	219.1	254.7	226.8	212.7	236.3	205.1	262.4
Money	38.8	40.6	55.1	73.4	73.6	72.8	100.1	93.8	90.6	97.2	114.8	130.8	127.8	154.3	166.9	220.8	298.0	435.9
Quasi-Money	17.9	22.3	29.7	42.5	48.7	48.2	60.9	74.8	79.5	94.3	126.7	145.6	165.0	234.0	217.5	268.0	370.4	376.6
Restricted Deposits	....	....	....	....	....	....	....	....	....	....	....	....	8.1	10.0	19.6	15.4	10.4	6.6
Other Items (Net)	....	....	....	....	....	....	59.8	43.8	45.5	61.2	69.0	61.2	72.6	63.3	38.9	-46.0	-89.6	-91.5

201

TABLE A9: NIGERIA -- MONETARY SURVEY 1971 TO 1988

	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
MONETARY AUTHORITIES																		
	(millions of naira)																	
Foreign Assets	283.0	249.0	389.0	3454.0	3586.0	3293.0	2766.0	1308.0	3109.0	5622.0	2842.0	1313.0	918.0	1216.0	1686.0	3637.0	4661.0	3290.0
Claims on Central Government	232.0	132.0	134.0	10.0	313.0	502.0	1596.0	3166.0	2484.0	2859.0	6047.0	8023.0	11347.0	10701.0	11245.0	14472.0	18159.0	27603.0
Claims on Private Sector	93.0	140.0	103.0	190.0	243.0	274.0	466.0	514.0	619.0	566.0	681.0	681.0	788.0	1003.0	1099.0	1301.0	1358.0	1344.0
Claims on Deposit Money Banks	18.0	25.0	41.0	10.0	1.0	9.0	87.0	32.0	37.0	2.0	6.0	125.0	523.0	367.0	277.0	3250.0	1092.0	951.0
Claims on other Financial Insts.	1.0	1.0	5.0	5.0	15.0	15.0	21.0	27.0	115.0	190.0	229.0	237.0	275.0	301.0	324.0	326.0	506.0	607.0
Reserve Money	423.0	454.0	561.0	1409.0	2203.0	2773.0	3430.0	3312.0	3847.0	6495.0	6278.0	6803.0	7055.0	7267.0	7785.0	8292.0	9853.0	13982.0
of Which: Currency Outside DMBs	355.0	385.0	436.0	570.0	1031.0	1351.0	1941.0	2157.0	2351.0	3186.0	3862.0	4223.0	4843.0	4884.0	4910.0	5178.0	6299.0	9414.0
Foreign Liabilities	3.0	3.0	4.0	1.0	12.0	10.0	4.0	2.0	50.0	177.0	414.0	271.0	191.0	112.0	25.0	95.0	41.0	47.0
Central Government Deposits	17.0	24.0	19.0	2098.0	1732.0	1088.0	649.0	820.0	1442.0	1885.0	1459.0	576.0	1353.0	1659.0	2680.0	2903.0	4904.0	6319.0
Capital Accounts	30.0	41.0	45.0	49.0	53.0	60.0	72.0	82.0	115.0	151.0	208.0	225.0	252.0	289.0	372.0	873.0	1196.0	1466.0
Other Items (Net)	153.0	26.0	43.0	111.0	128.0	153.0	589.0	716.0	723.0	435.0	1363.0	2387.0	3720.0	3598.0	3398.0	10774.0	9727.0	11929.0
DEPOSIT MONEY BANKS																		
Reserve	38.0	44.0	65.0	331.0	862.0	1237.0	1438.0	1114.0	925.0	1552.0	1396.0	2023.0	1285.0	1051.0	824.0	1506.0	2202.0	2355.0
Foreign Assets	16.0	12.0	39.0	64.0	107.0	169.0	225.0	178.0	236.0	249.0	259.0	246.0	344.0	413.0	415.0	1740.0	3128.0	5077.0
Claims on Central Government	318.0	410.0	430.0	778.0	788.0	1207.0	1565.0	1150.0	2476.0	2989.0	2192.0	3318.0	6037.0	9427.0	11007.0	8259.0	9291.0	8429.0
Claims on Private Sector	501.0	609.0	744.0	931.0	1507.0	2107.0	2993.0	3971.0	4506.0	6178.0	8236.0	9886.0	10283.0	10820.0	11723.0	15390.0	16560.0	19514.0
Claims on Other Financial Insts.	--	6.0	2.0	9.0	27.0	55.0	78.0	50.0	109.0	216.0	302.0	279.0	779.0	476.0	456.0	566.0	629.0	1727.0
Demand Deposits	285.0	337.0	431.0	721.0	1267.0	2185.0	2980.0	2530.0	3061.0	4422.0	4702.0	4938.0	5620.0	5051.0	6396.0	6194.0	7708.0	9882.0
Time and Savings Deposits	372.0	457.0	582.0	973.0	1572.0	1979.0	2255.0	2420.0	3702.0	5163.0	5492.0	6645.0	7752.0	9039.0	9926.0	10942.0	13989.0	16960.0
Foreign Liabilities	16.0	15.0	10.0	16.0	13.0	47.0	25.0	64.0	67.0	88.0	151.0	231.0	263.0	93.0	260.0	820.0	882.0	345.0
Central Government Deposits	....	....	....	....	....	....	....	352.0	205.0	424.0	481.0	437.0	567.0	646.0	1275.0	1091.0	1389.0	2223.0
Credit From Monetary Authorities	18.0	29.0	41.0	10.0	1.0	9.0	87.0	32.0	37.0	2.0	6.0	125.0	523.0	367.0	277.0	3254.0	1045.0	567.0
Capital Accounts	70.0	77.0	65.0	100.0	127.0	157.0	202.0	267.0	328.0	389.0	497.0	668.0	845.0	967.0	1129.0	1299.0	1545.0	1932.0
Other Items (Net)	112.0	167.0	130.0	292.0	310.0	387.0	691.0	798.0	850.0	695.0	1073.0	2709.0	3157.0	5024.0	5162.0	3951.0	5250.0	5192.0
MONETARY SURVEY																		
Foreign Assets (Net)	280.0	244.0	414.0	3500.0	3668.0	3396.0	2962.0	1420.0	3228.0	5607.0	2556.0	1057.0	808.0	1423.0	1816.0	4463.0	6465.0	7974.0
Domestic Credit	1127.0	1274.0	1399.0	-176.0	5161.0	3073.0	6010.0	7706.0	8662.0	10689.0	15746.0	21410.0	27590.0	30423.0	31900.0	36409.0	40209.0	50680.0
Claims on Central Govt. (Net)	532.0	518.0	545.0	-1310.0	-631.0	622.0	2452.0	3143.0	3313.0	3539.0	6299.0	10328.0	15465.0	17823.0	18297.0	18827.0	21157.0	27488.0
Claims on Private Sector	593.0	749.0	847.0	1121.0	1750.0	2382.0	3459.0	4485.0	5126.0	6744.0	8917.0	10567.0	11071.0	11823.0	12822.0	16690.0	17918.0	20857.0
Claims on Other Financial Insts.	1.0	7.0	7.0	13.0	42.0	70.0	99.0	77.0	224.0	406.0	531.0	516.0	1054.0	777.0	781.0	892.0	1135.0	2334.0
Money	670.0	747.0	926.0	1757.0	2605.0	3864.0	5558.0	5101.0	6147.0	9227.0	9745.0	10049.0	11283.0	12204.0	13227.0	12663.0	14906.0	21446.0
Quasi-Money	372.0	457.0	582.0	973.0	1572.0	1979.0	2255.0	2420.0	3702.0	5163.0	5494.0	6645.0	7752.0	9039.0	9926.0	10942.0	13989.0	16960.0
Other Items (Net)	355.0	313.0	305.0	594.0	650.0	625.0	1158.0	1605.0	2042.0	1905.0	3064.0	5774.0	9363.0	10660.0	10562.0	17267.0	18179.0	20248.0

102/1

TABLE A10: SENEGAL -- MONETARY SURVEY 1971 TO 1988

	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
MONETARY AUTHORITIES (billions of CFA francs)																		
Foreign Assets	7.5	9.9	2.8	1.4	7.0	6.3	7.9	3.9	3.9	1.8	2.5	3.8	5.1	1.8	1.9	3.0	2.5	3.2
Claims on Central Government	--	0.0	--	--	0.5	3.4	8.1	8.2	16.5	36.8	59.6	116.2	132.3	145.3	158.2	154.5	170.1	172.9
Claims on Deposit Money Banks	13.6	12.9	25.2	38.6	39.5	42.8	44.3	71.2	79.2	108.1	146.7	168.6	173.8	157.9	179.7	160.6	156.4	194.5
Reserve Money	16.9	17.7	21.5	32.2	34.6	38.7	44.6	55.8	51.1	62.0	85.8	106.7	103.1	102.2	108.2	125.8	132.6	131.8
of which: Currency Outside DMBs	15.9	16.5	19.5	29.0	29.5	33.7	39.5	46.2	42.9	51.4	73.6	84.5	78.3	77.3	86.2	104.3	100.7	92.8
Foreign Liabilities	0.3	0.3	2.7	2.6	7.0	10.9	11.8	23.2	42.7	67.2	112.3	157.0	191.7	198.8	224.6	187.1	176.5	210.3
Central Government Deposits	1.7	1.6	0.7	2.0	2.6	1.0	1.4	1.9	1.4	12.9	6.2	20.5	16.0	13.5	6.1	6.0	9.3	9.9
Other Items (Net)	2.2	3.2	3.2	3.2	2.8	1.9	2.5	2.4	4.4	4.6	4.5	4.5	0.4	-9.5	1.0	9.4	10.6	18.6
DEPOSIT MONEY BANKS																		
Reserves	1.5	1.3	2.2	2.3	4.8	5.2	5.4	9.2	6.6	10.1	11.7	21.9	21.2	24.2	22.4	28.4	32.1	39.7
Foreign Assets	2.1	2.8	3.6	4.2	5.1	9.2	10.8	9.7	10.7	13.0	12.4	18.6	18.8	19.4	15.8	12.9	10.6	17.7
Claims on Central Government	3.6	5.3	6.3	8.0	10.6	14.4	12.6	12.3	14.1	15.6	14.5	13.5	13.5	14.9	14.5	15.4	15.7	24.8
Claims on Private Sector	38.6	46.0	62.8	88.8	106.2	121.1	143.3	194.3	222.1	260.1	312.1	337.8	354.2	352.1	371.2	372.3	382.8	412.7
Claims on Other Financial Insts.	....	....	....	....	....	....	....	....	6.7	2.9	2.4	2.1	2.3	2.5	3.6	4.2	4.2	5.3
Demand Deposits	17.4	21.0	23.0	36.9	42.9	58.6	66.7	76.5	74.3	82.0	85.1	98.7	106.1	109.6	103.4	117.2	109.7	117.0
Time Deposits	2.8	3.7	8.2	9.5	10.9	18.8	21.9	32.3	39.9	39.8	53.7	73.3	83.9	95.5	106.6	106.7	118.4	119.6
Foreign Liabilities	5.0	6.6	7.1	8.9	15.4	15.3	19.9	26.3	35.2	34.8	35.8	38.3	30.9	47.7	52.1	37.1	43.1	57.1
Long-Term Foreign Liabilities	2.9	4.0	3.8	3.9	3.8	4.0	3.9	3.8	10.8	13.0	14.2	15.3	16.0	16.2	11.1	11.6	11.4	11.7
Central Government Deposits	2.5	4.2	4.3	6.1	8.2	4.4	4.2	4.5	12.3	13.6	19.0	15.1	16.4	18.8	17.5	23.9	32.1	38.1
Credit from Monetary Authorities	13.6	12.9	25.2	38.6	39.5	42.8	44.3	71.2	78.2	107.6	146.9	169.6	175.3	156.0	182.1	167.5	159.0	196.8
Other Items (Net)	1.6	3.0	3.2	-0.4	6.0	6.0	11.3	10.9	9.7	11.1	-1.5	-16.4	-18.5	-30.6	-45.3	-30.8	-28.3	-40.0
Treasury Claims: Private Sector	1.2	1.3	0.7	0.8	0.8	0.8	1.3	1.8	1.8	1.4	1.3	1.1	1.9	1.5	2.3	2.1	2.2	2.8
Post Office: Checking Deposits	1.9	1.6	1.7	1.9	2.3	2.5	2.9	3.7	3.6	4.2	4.0	5.3	4.8	4.7	3.8	5.5	3.8	4.9
MONETARY SURVEY																		
Foreign Assets (Net)	4.4	5.8	-3.4	-5.9	-10.3	-10.7	-12.9	-35.8	-63.3	-87.2	-133.2	-172.8	-198.8	-225.3	-258.9	-208.3	-206.6	-246.5
Domestic Credit	39.9	47.2	65.7	90.7	108.8	137.0	162.7	213.4	250.6	293.6	368.9	441.0	477.1	489.9	530.8	535.7	538.9	576.3
Claims on Central Govt. (Net)	0.1	0.0	2.2	1.0	1.9	14.0	16.7	16.0	18.8	28.7	51.6	98.3	116.3	131.1	150.7	153.5	146.0	151.9
Claims on Private Sector	39.8	47.3	63.5	89.7	106.9	121.9	144.6	196.1	223.9	261.5	313.5	339.0	356.1	353.6	373.4	374.3	385.0	415.5
Claims on Other Financial Insts.	--	--	--	--	--	1.1	1.5	1.2	7.9	3.4	3.8	3.8	4.7	5.2	6.7	7.8	7.9	9.0
Money	35.2	39.1	44.2	67.8	75.2	94.9	109.1	126.5	121.2	137.9	163.2	189.0	189.2	191.7	193.5	227.0	214.4	214.9
Quasi-Money	2.8	3.7	8.2	9.5	10.9	18.8	21.9	32.3	39.9	39.8	53.7	73.3	83.9	95.5	106.6	106.7	118.4	119.6
Long-Term Foreign Liabilities	2.9	4.0	3.8	3.9	3.8	4.0	3.9	3.8	10.8	13.0	14.2	15.3	16.0	16.2	11.1	11.6	11.4	11.7
Other Items (Net)	3.3	6.2	6.1	3.6	8.6	8.7	14.9	14.9	15.4	15.8	4.6	-9.5	-10.7	-38.7	-39.3	-17.8	-11.9	-16.3

Annex B: Forecasting the Relation between Money and Income

Money-income ratios for the period 1971 to 1988 in the study countries are shown in Figure 1. For most years in most countries the M2/GDP ratio lies between .15 and .25 but there are a significant number of observations outside this range. The data show a good deal of erratic movement but there are some trends and semi-trends that reflect factors which seem to have some year-to-year continuity.

i. Regressions

We estimated a number of regressions relating broad money to GDP and other variables for each of the study countries. The results are rather mixed. In most cases a simple regression between the log of the levels of M2, GDP, and lagged M2, produced a high R-squared. In some cases time trends helped the fit but aggravated problems of collinearity. Regressions relating real money demand to real GDP also fitted quite well in most cases.

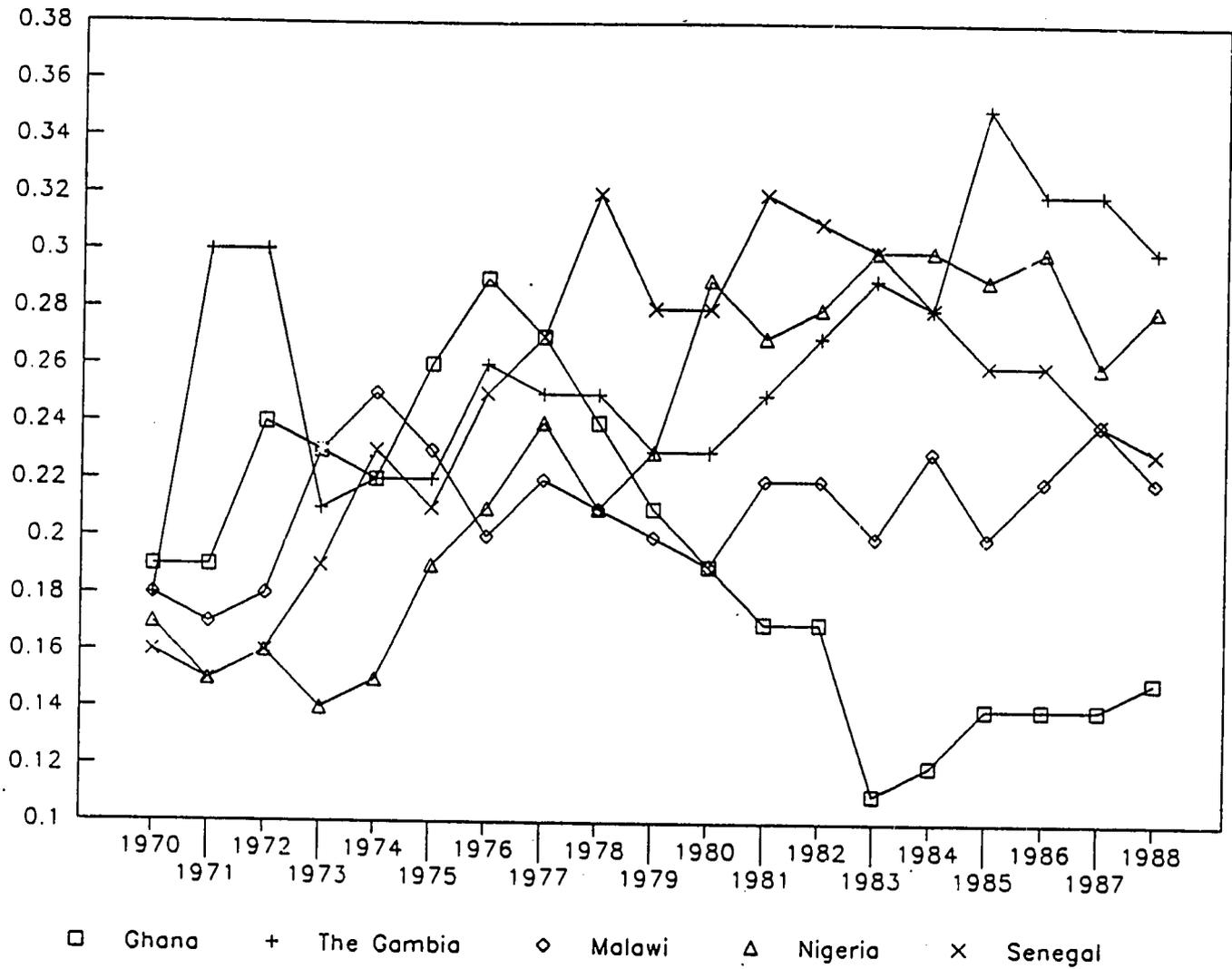
We coupled those basic regressions with a variety of measures of the return on money holdings (Edwards and Khan 1985). We tried using deposit rates when available and in their absence used whatever interest rates were reported for a sufficient number of years. We also tried inflation rates and the difference between the inflation rate and some interest rates.

The results were not satisfactory. The coefficients were often not significant and were sensitive to the specification of the equation. In the circumstances it is not surprising that it is difficult to sort out the influence of interest rates from the other factors affecting investors' perceptions of the attractiveness of holding domestic money rather than alternative assets. That is not to say, of course, that interest rates have no influence. It is just hard to measure that influence.

On the other hand the regressions support the view that money and income move together. The money-GDP link remains intact after removing the trend so it is not merely an artifact of the general increase of macroeconomic variables in economies experiencing chronic inflation. We also tried regressions using first differences and logarithmic first differences. Their R-squared estimates were, as expected, much lower but since the variance of rates of growth is smaller than the variance of levels, the forecasts derived from these regressions performed as well (or as badly) as the regressions based on levels.

While there is no doubt about the basic link between money and income, the connection is not firm or precise. Regardless of the

Money/GDP Ratios 1970-1988



107a

method used, the within sample errors are large in relation to monetary policy objectives. Out-of-sample errors are, of course, even larger. By way of experiment we fitted the log first difference equations to data for 1971-86 and then used the regression to forecast 1987 and 1988. The results are shown in Table 3 in the text.

We only tried a limited set of regressions. We could, no doubt have obtained higher correlation coefficients by more extensive experiments but our experience with data-mining in our circumstances led us to refrain from that kind of exercise.

We might also have subjected the data to more sophisticated time series analysis, e.g. ARIMA models. However, in view of the nature of the historical processes which are reflected in the data we did not feel that we could regard the data as the outcome of a single stochastic process.

All the data used in the reported regressions were drawn from World Tables 1990 (World Bank 1991).

Table B1: Money Demand Regression Results for Nigeria, Malawi, Senegal, Ghana, and The Gambia

Variables: Real M2 and GDP in logs
 Regression: $LRM2 = a + b(LRGDP) + c(LRM2)_{-1}$
 1971 - 1988

Country	a	b	c	R ²	DW
Nigeria	0.16 (0.13)	0.17 (2.00)	0.79 (9.05)	0.86	1.78
Malawi	-0.99 (-0.67)	0.62 (1.68)	0.39 (1.60)	0.87	1.86
Senegal	1.23 (0.70)	-0.09 (-0.24)	0.88 (0.14)	0.92	1.51
Ghana	-4.87 (-0.56)	0.41 (0.59)	0.92 (9.43)	0.86	1.60
Gambia	-3.63 (-1.44)	1.23 (1.83)	0.22 (0.65)	0.87	2.72

Regression: $LRM2 = a + b(LRGDP) = c(LRM2)_{.1} + d(TREND)$

Country	a	b	c	d	R ²	DW
Nigeria	0.57 (0.45)	0.25 (2.35)	0.64 (4.28)	0.01 (1.22)	0.87	1.68
Malawi	-0.89 (-0.37)	0.61 (1.30)	0.38 (1.54)	0.001 (0.05)	0.87	1.86
Senegal	-1.82 (-0.66)	0.36 (0.76)	0.94 (6.52)	-0.02 (-1.41)	0.93	1.98
Ghana	-14.65 (1.53)	1.32 (1.66)	0.59 (3.06)	-0.04 (-1.89)	0.89	1.85
Gambia	2.26 (0.63)	0.22 (0.29)	0.16 (0.52)	0.05 (2.12)	0.90	2.42

Variables: Nominal M2 and GDP

Regression: $LNM2 = a + b(LNGDP) + c(LNM2)_{.1}$
1971 - 1988

Country	a	b	c	R ²	DW
Nigeria	-2.58 (-5.41)	0.78 (7.03)	0.39 (4.70)	0.99	1.86
Malawi	-1.20 (-2.29)	0.70 (2.74)	0.34 (1.40)	0.98	1.81
Senegal	0.62 (1.11)	-0.07 (-0.36)	0.99 (6.80)	0.98	1.81
Ghana	-1.01 (-0.79)	0.15 (1.01)	0.86 (4.99)	0.99	1.70
Gambia	-2.69 (-2.27)	1.37 (2.51)	-0.15 (-0.33)	0.98	2.21

Regression: $LNM2 = a + b(LNGDP) + c(LNM2)_{-1} + d(TREND)$

Country	a	b	c	d	R ²	DW
Nigeria	-3.70 (-4.89)	0.86 (7.63)	0.44 (5.37)	-0.03 (-1.82)	0.99	2.35
Malawi	-0.48 (-0.25)	0.58 (1.48)	0.31 (1.19)	0.02 (0.39)	0.98	1.75
Senegal	0.59 (0.21)	-0.06 (-0.12)	0.99 (6.40)	0.0007 (-0.01)	0.98	1.81
Ghana	-1.50 (-1.38)	0.11 (0.88)	0.45 (2.20)	0.15 (2.74)	0.99	1.64
Gambia	-0.35 (-0.25)	1.01 (2.04)	-0.41 (-1.02)	0.10 (2.41)	0.99	1.81

Variables: Nominal GDP and M2 in logs
 REGRESSION: $LNGDP = a + b(LNM2) + c(LNM2)_{-1}$
 1971 - 1988

Country	a	b	c	R ²	DW
Nigeria	3.49 (18.9)	0.98 (7.02)	-0.21 (-1.56)	0.99	1.49
Malawi	1.88 (13.1)	0.47 (2.73)	0.47 (2.66)	0.98	0.81
Senegal	2.85 (11.2)	-0.12 (-0.35)	0.85 (2.62)	0.95	0.50
Ghana	8.5 (64.3)	0.42 (1.01)	0.71 (1.64)	0.99	0.99
Gambia	2.09 (28.6)	0.21 (2.51)	0.61 (7.12)	0.99	1.92

Variables: Nominal GDP and M2 in log first differences
 REGRESSION: $LNGDP = a + b(LNM2) + c(LNM2)_{-1}$
 1972 - 1988

Country	a	b	c	R2	DW
Nigeria	0.07 (1.74)	0.63 (4.09)	-0.17 (-1.16)	0.54	2.34
Malawi	0.07 (2.20)	0.19 (1.47)	0.21 (1.58)	0.22	1.46
Senegal	0.08 (2.86)	0.05 (0.36)	0.16 (1.08)	0.10	2.41
Ghana	0.03 (0.19)	0.88 (2.28)	0.05 (0.17)	0.27	1.80
Gambia	0.03 (0.75)	0.16 (1.09)	0.44 (3.15)	0.43	2.65

Bibliography

- Abdel-Salam, O.S. "The Evolution of African Monetary Institutions" The Journal of Modern African Studies vol.8, no. 3, 1970:339-362
- Abken, P.A. "Innovations in Modeling the Term Structure of Interest Rates" FRBA Economic Review vol. LXXV, no.4, July/August 1990:2-27
- Acharya, S. and S. Madhur "Informal Credit Markets and Black Money: Do They Frustrate Monetary Policy?" Economic and Political Weekly Oct. 8, 1983: 1751-1756
- Adams, D.W. "Policy Issues in Rural Finance and Development" Ohio State University, Paper No.1 Conference on Rural Finance Research July-August 1977
- and D.H. Graham "A Critique of Traditional Credit Projects and Policies" Journal of Development Economics vol.8, 1981:347-366
- and J.D. Von Pischke (Eds.) Undermining Rural Development with Cheap Credit Boulder: Westview Press 1984
- Adekunle, J.O. "The Demand for Money: Evidence from Developed and Less Developed Economies" IMF Staff Papers vol.xv., no.2, July 1968 [Reprinted in (Eds.) Coats and Khathkate 1980]
- Ahmed, Alhaji. A. "Monetary Stability and Economic Growth in Nigeria" Economic and Financial Review vol.27, no.4, December 1989:30-32
- Alesina, A. and A. Drazen "Why are Stabilizations Delayed?" NBER Working Paper Series National Bureau of Economic Research August 1989
- Alt, J.E. and K.A. Shepsle Perspectives on Positive Political Economy Cambridge: Cambridge University Press 1990
- Anderson, P.S. "Monetary Velocity in Empirical Analysis" in Controlling Monetary Aggregates Conference Series No. 1 Federal Reserve Bank of Boston June 1969
- Arida, P. and L. Taylor "Short-Run Macroeconomics" Ch. 17 in (Eds.) Chenery and Srinivasan 1989
- Arndt, H.W. "Financial Development in Asia" Asian Development Review vol.1, no.1, 1983:86-100
- Arrow, K.J. "Towards a Theory of Price Adjustment" in (Ed.) M. Abromowitz et. al. The Allocation of Economic Resources Stanford: Stanford

University Press 1959

Ayre, P.C.I. (Ed.) Finance in Developing Countries London: Frank Cass 1977

BCEAO "Méthode de Détermination des Concours Globaux de la Banque Centrale" mimeo June 8th, 1979

BFA "Merchant Banking: A Survey" Business & Financial Analyst vol.2, no.5, August 1990

BIS "International Convergence of Capital Measurement and Capital Standards" The Basle Committee on Banking Regulations and Supervisory Practices Basle, July 1988

Backus, D. and J. Driffill "Rational Expectations and Policy Credibility Following a Change in Regime" Review of Economic Studies vol.LII, 1985:211-221

Bain, A.D. "Monetary Control Methods in the United Kingdom" Ch.V in (Eds.) Clayton, Gilbert, and Sedgwick 1971

Bajo, M.C. "Special Role of a Central Bank in Developing Countries" in CBG 1978:105-113

Balderston, F.E. "Communication Networks in Intermediate Markets" Management Science vol.4, 1958:154-171

Bank of Ghana "Financial Liberalization and Exchange Rate Deregulation -- The Ghanaian Experience" Seminar on "Experience with Instruments of Economic Policy" Addis Ababa April 1990

Barro, R.J. "Reputation in a Model of Monetary Policy With Incomplete Information" Journal of Monetary Economics vol.17, 1986:3-20

Bates, R.H. Markets and States in Tropical Africa Berkeley: University of California Press 1981

Batten, D., Blackwell, M., Kim, I., Nocera, S. and Y. Ozeki, "The Instruments and Operating Procedures for Conducting Monetary Policy in the Group of Five Countries," IMF Working Paper WP/89/57 July 21, 1989.

Belongnia, M.T. and R.A. Gilbert "The Effects of Management Decisions on Agricultural Bank Failures" American Journal of Agricultural Economics vol.72, no.4, November 1990:901-910

Bench, R.R. "Modernization of Regulation and Supervision of LDC Financial Institutions" Paper presented at Seminar on Financial Sector Liberalization and Regulation (Harvard Law School) Cambridge June, 1990

Benston, G.J. "Federal Regulation of Banking: Historical Overview" Ch.1 in (Eds.) G.G. Kaufman and R.C. Kormendi Deregulating Financial Services Public Policy in Flux Cambridge: Ballinger 1986

Berlin, P. "UMOA Banking and Financial Sector Reforms, An Analytical Framework Paper," World Bank (Draft) April 15, 1988.

----- "Reserve Requirements in Senegal" USAID/Dakar

- mimeo, June 6, 1990
- Bettelheim, C. Planification & croissance accélérée
Paris: Francois Maspero 1979
- Bhatia, R.J. "The West African Monetary Union An
Analytical Review" International Monetary
Fund Washington D.C. Occasional Paper
No. 35, May 1985
- Bhatt, V.V. "Central Banks: Their Regulatory Function"
Development Digest vol. XII, no.2, April
1974:83-89
- "Improving the financial structure"
Finance and Development vol.23, no.2
June 1986:20-22
- Biggs, T., P. Srivastava and J. Wakeman-Linn "Monetary
Management in Nigeria: The Feasibility of
Indirect Controls" (draft) December 1990
- Black, S. and W.T. Gavin "Price Stability and the Swedish
Monetary Experiment" FRBC economic commentary
December 15, 1990
- Blackburn, K and M. Christensen "Monetary Policy and
Policy Credibility: Theories and Evidence"
Journal of Economic Literature vol. XXVII
March 1989:1-45
- Blejer, M.L. and S.B. Sagari "Sequencing the Liberalization
of Financial Markets" Finance & Development March
1988 reprinted in The Path to Reform Issues and
Experiences September 1990:20-23
- Blinder, A.S. "Issues in the Coordination of Monetary
and Fiscal Policy" Ch.2 in Monetary Policy
Issues in the 1980s A Symposium Sponsored
By the Federal Reserve Bank of Kansas City
Jackson Hole, Wyoming August 1982
- Blitzer, C.R., P.B. Clark and L. Taylor Economy-Wide
Models and Development Planning London:
Oxford University Press for the World
Bank 1975
- "The Status of Planning: An Overview" Ch.1
in (Eds.) C.R. Blitzer, P.B. Clark, and
L. Taylor 1975
- Bolnick, B.R. "Interpreting Polak: Monetary Analysis in
'Dependent' Economies" Journal of Development
Studies 1975:325-342
- "Monetary Management in Sub-Saharan Africa
Conditions and Prospects in Malawi" (draft)
November 1990
- Bordo, M.D. "The Lender of Last Resort: Alternative
Views and Historical Experience"
Economic Review Federal Reserve Bank of
Richmond vol.76/1, January/February 1990
- Bosworth, B. and J.S. Duesenberry "A Flow of Funds Model
and its Implications" in Issues in Federal Debt
Management Conference Series No. 10 Federal

- Reserve Bank of Boston June 1973
- Branson, W.H. "Economic Structure and Policy for External Balance" IMF Staff Papers vol.30, no.1, March 1983:39-66
- Brimmer, A. "Central Banking and Economic Development" Development Digest vol.XII, no. 2, April 1974 67-76
- Brunner, K. "The Control of Monetary Aggregates" in Controlling Monetary Aggregates III Boston: Federal Reserve Bank of Boston 1980:1-65
- and A.H. Meltzer "Money and Credit in the Monetary Transmission Process" American Economic Review vol. 78, no.2, 1988:446-451
- Bruno, M. "Opening Up: Liberalization with Stabilization" Ch. 10 in (Eds.) R. Dornbusch and F. Leslie C.H. Helmers 1988
- and J.D. Sachs Economics of Worldwide Stagflation Cambridge: Harvard University Press 1985
- Bryan, M.F. and W.T. Gavin "Forecast Accuracy and Monetary Policy" FRBC economic commentary Jan.1, 1991
- CBN Twenty Years of Central Banking in Nigeria Lagos: Research Department Central Bank of Nigeria 1979
- Credit Policy Guidelines for 1990 Fiscal Year Lagos: Central Bank of Nigeria December 1989
- Annual Report and Statement of Accounts For the Year Ended 31st December, 1989 Lagos: Central Bank of Nigeria 1990
- CBG The Role of Monetary Policy in Developing Countries Banjul: Central Bank of The Gambia 1978
- CMZF La Zone Franc Rapport 1987 Paris: Secrétariat du Comité Monétaire de la Zone Franc 1988
- Calamanti, A. The Securities Markets and Underdevelopment The Stock Exchange in the Ivory Coast, Morocco, Tunisia Milan: Giuffre Publisher 1983
- Chakravarty, S. Capital and Development Planning Cambridge: The MIT Press 1969
- Chandavarkar, A.G. "The Promotion of Personal Savings and the Integration of Savings Policy in Overall Economic and Financial Policy" Savings and Development no.4 1978-II:265-287
- Chant, J. "Notes on the Possible Use of Government Deposits for Cash Reserve Management in Indonesia" in (Eds.) D. Cole and R.H. McLeod Cases on Financial Policy and Banking Deregulation in Indonesia mimeo Jakarta 1991
- Chenery, H.B. and M. Bruno "Development Alternatives in and Open Economy" Economic Journal vol.72,

- 1962:79-103
- Chenery, H.B. and T.N. Srinivasan (Eds.) Handbook of Development Economics (in two volumes)
New York: Elsevier Science Publishers 1989
- Cho, Y-J. and D. Khathkate "Lessons of Financial Liberalization in Asia: A Comparative Study,"
World Bank Discussion Papers, No. 50, 1989.
- Clayton, G., J.C. Gilbert, and R. Sedgwick (Eds.)
Monetary Theory and Monetary Policy in the 1970s London: Oxford University Press 1971
- Clayton, G., J.C. Dodds, J.L. Ford, and D. Ghosh
"An Econometric Model of the U.K. Financial Sector: Some Preliminary Findings" in (Eds.) Johnson and Nobay 1974
- Coats, W.L. "In Search of a Monetary Anchor: A "New" Monetary Standard" IMF Working Paper WP/89/82 October 1989
----- and D.R. Khathkate (Eds.) Money and Monetary Policy in Less Developed Countries A Survey of Issues and Evidence New York: Pergamon Press 1980
- Cole, D.C. and Y.C. Park Financial Development in Korea, 1945-1978 Cambridge: Council on East Asian Studies, Harvard University 1983
----- and H. Patrick "Financial Development in the Pacific Basin Market Economies" Development Discussion Papers No.182, HIID, Cambridge September 1984
----- and P. Wellons "The Financial System, Financial Reform and Economic Development" Development Discussion Paper No. 312, HIID, Cambridge Mass. September 1989
----- and B. Slade Yaser "Adapting Monetary Policy Instruments: Indonesia's Experience" Development Discussion Paper No. 310, HIID, Cambridge Mass. June 1989
----- and B.F. Slade "Development of Money Markets in Indonesia" Research Project on Money Markets in Asia, Harvard Law School April 1990
- Cook, T.Q. and T.D. Rowe "The Money Market" Ch. 1 in
(Eds.) Cook and Rowe 1986
----- Instruments of the Money Market 6th Edn. Richmond: Federal Reserve Bank of Richmond 1986
- Cooper, R.N. "Economic Interdependence and Coordination of Economic Policies" Ch. 23 in (Eds.) R.W. Jones and P.B. Kenen Handbook of International Economics New York: Elsevier Science Publishers 1985
- Corrigan, E.G. "A Perspective on Recent Financial Disruptions" Federal Reserve Bank of New York Review Winter 1989-90:8-15
----- "Public Authorities' Relations to the

- Banking Sector" Ch.11 in (Ed.) Z. Mikdashi 1990
 ----- "The Role of Central Banks and the Financial
 System in Emerging Market Economies"
 Federal Reserve Bank of New York Review
 Summer 1990, vol.15, no.2:1-7
- Currie, D. and S. Wren-Lewis "Evaluating Blueprints for the
 Conduct of International Macro Policy"
American Economic Review vol.79, no.2
 May 1989:264-269
- Dale, R. Bank Supervision Around the World New York: Group
 of Thirty 1982
 ----- The Regulation of International Banking
 Cambridge: Cambridge University Press 1984
- Davis, O.A. and M.I. Kamien "Externalities, Information,
 and Alternative Collective Action" Ch.4 in
 (Eds.) R. Dorfman and N.S. Dorfman
Economics of the Environment Selected
Readings New York: W.W. Norton 1972
- Day, R.H. "Notes on Adaptive Economic Theory"
European Review of Agricultural Economics
 vol.3, 2/3, 1976:235-264
- Demirguc-Kunt, A. "Deposit Institution Failures: A Review
 of Empirical Literature" FRB Cleveland
Economic Review vol.25, no.4, 1989:2-18
- Devarajan, S. and J. de Melo "Evaluating Participation in
 African Monetary Unions: A Statistical
 Analysis of the CFA Zones" World Development
 vol. 15, no.4 1987:483-496
 ----- "Membership in the CFA Zone:
 Odyssean Journey or Trojan Horse?" (draft) May 1990
- Diaz-Alejandro, C.F. "International Markets for LDCs -- The Old
 and the New" American Economic Review vol.68,
 May 1978:254-269
- Dixit, A. and B. Nablehuff "Making Strategies Credible"
 mimeo 1989
- Dooley, M.P. and D.J. Mathieson "Financial Liberalization
 and Stability in Developing Countries" IMF
 Working Paper WP/87/19 March 1987
- Dornbusch, R. "Monetary Policy under Exchange Rate
 Flexibility" in FRB Boston 1978
 ----- "Flexible Exchange Rates and Interdependence"
 IMF Staff Papers vol.30, no.1, March 1983:3-30
 ----- "The Adjustment Mechanism: Theory and Problems"
 in (Ed.) N. S. Fieleke International Payments
Imbalances in the 1980s Conference Series No. 32
 Federal Reserve Bank of Boston 1988
 ----- and F.Leslie C.H. Helmers The Open Economy
tools for policymakers in developing countries
 New York: Oxford University Press for the
 World Bank 1988
 ----- and A. Reynoso "Financial Factors in Economic
 Development" American Economic Review vol.79,

- no.2, 1989:204-209
----- and A. Giovannini "Monetary Policy in the
Open Economy" Ch. 23 in (Eds.) Friedman
and Hahn 1990
- Dotsey, M. and A. Kuprianov "Reforming Deposit Insurance:
Lessons from the Savings and Loan Crisis"
FRBR Economic Review vol.76/2, March/April
1990:3-28
- Drake, P.J. "Securities Markets in Less-Developed
Countries" in Ayre 1977
----- Money, Finance and Development New York:
John Wiley and Sons 1980
- Duesenberry, J.S. Money and Credit: Impact and Control
Englewood Cliffs: Prentice-Hall Inc. 1964
----- "The Political Economy of Central Banking
in the United States or Quis Custodiet
Ipsos Custodes" in (Ed.) Hodgman 1983
----- and M.F. McPherson "Monetary Management
in Sub-Saharan Africa" Development Discussion
Paper No. 369, HIID January 1991
- Eaton, J. "Foreign Public Capital Flows" Ch.25 in
(Eds.) Chenery and Srinivasan 1989
- Ebhodaghe, J.U. "Bank Deposit Insurance Scheme in
Nigeria" Paper presented to The Bank Directors'
Conference, Abuja October 1990
- Economist "Central Banking Survey" The Economist
September 22, 1984
----- "Everybody's business: International Monetary
Reform A Survey" The Economist 5 October 1985
----- "What is a Bank? A survey of International
Banking" The Economist 7-13 April 1990
- Edwards, S. and M.S. Khan "Interest rates in developing
countries" Finance and Development vol.22,
no.2, June 1985:28-31
- Eisenbeis, R.A. "Regulation and Financial Innovation:
Implications for Financial Structure and Competition
Among Depository and Non-Depository Institutions"
Issues in Bank Regulation Winter 1981
----- "Regulatory Policies and Financial Stability"
Ch.6 in Debt, Financial Stability, and Public Policy
A Symposium Sponsored by The Federal Reserve Bank of
Kansas City, August 1986
- FRB Boston Managed Exchange Rate Flexibility: The
Recent Experience Conference Series no. 20
Federal Reserve Bank of Boston 1978
- FRB Chicago Modern Monetary Mechanics: a workbook on
deposits currency and bank reserves
Chicago: Federal Reserve Bank of Chicago
(revised) October 1982
- Fair, D. "The independence of central banks" The Banker
October 1979:31-41.
- Falegan, Chief S.B. "Instruments of Monetary Policy: Their

- Application and Effectiveness in Nigeria" in
CBG 1978
- Fama, E.F. "Efficient Capital Markets: A Review of
Theory and Empirical Work" Journal of
Finance vol.25, no.2, May 1970:383-417
- Fieleke, N.S. "The International Transmission of
Inflation" in FRB Boston 1978
- Frenkel, J.A. and M.L. Mussa "Asset Markets, Exchange Rates,
and the Balance of Payments" in (Eds.) R.W. Jones
and P.B. Kenen Handbook of International Economics
vol. II, New York: Elsevier Science Publishers 1985
- Friedman, B.M. "Optimal Expectations and the Extreme Information
Assumptions of Rational Expectations Macromodels"
Journal of Monetary Economics vol. 6, 1979:153-165
- "Monetary and Regulatory Policies for Developing
Financial Systems" Seoul: The Bank of Korea 1985
- "Changing Effects of Money on Real Economic
Activity" in Monetary Policy Issues in
the 1990s Kansas City: Federal Reserve Bank
of Kansas City 1989
- and F.H. Hahn (Eds.) Handbook of Monetary
Economics (in two volumes) New York:
North-Holland 1990
- Friedman, M. "The Case for Flexible Exchange Rates"
in Essays in Positive Economics Chicago:
Chicago University Press 1953:157-203
- "Controls on Interest Rates Paid by Banks"
Journal of Money, Credit, and Banking
vol.11, no.1, Feb. 1970:15-32
- "A Theoretical Framework for Monetary
Analysis" in (Ed.) R.J. Gordon Milton
Friedman's Monetary Framework A Debate
with his Critics Chicago: The University
of Chicago Press 1974
- Fry, M.J. "The Cost of Financial Repression in
Turkey" Savings and Development no.2
1979-III:127-135
- "Financial Sectors in Some Small Island
Developing Economies" Ch.10 in (Ed.) B.Jalan
Problems and Policies in Small Economies
New York: St. Martin's Press 1982
- Money, Interest, and Banking in Economic
Development Baltimore: The Johns Hopkins
University Press 1988
- Furness, E.L. Money and Credit in Developing Africa
New York: St. Martin's Press 1975
- Fye, L.M. and M.F. McPherson "Government and Parastatal
Interlocking Arrears in The Gambia"
Economic Note 5/87 Statistics and Special
Studies Unit Ministry of Finance and Trade
The Gambia 1987
- Germany, J.D. and J.E. Morton "Financial Innovation and

- Deregulation in Foreign Industrial Countries" Federal Reserve Bulletin October 1985:743-753
- Gertler, M. "Financial Structure and Aggregate Economic Activity": An Overview" Journal of Money, Credit and Banking vol.20, no. 3, Part 2, August 1988:559-588
- Ghatak, S. Development economics London: Longman 1978
- Giavazzi, F. and M. Pagano "The Advantage of Tying One's Hands: EMS Discipline and Central Bank Credibility" European Economic Review, vol.32, 1988:1055-82
- Gillis, M., D.H. Perkins, M. Roemer, and D.R. Snodgrass Economics of Development 2nd Edition New York: W.W. Norton & Co. 1987
- Goldfeld, S.M. "The Demand for Money Revisited" Brookings Papers on Economic Activity no.3, 1973
- Goldsmith, R.W. "Central Banks and Financial Institutions" Ch. 22 in (Ed.) D. Krivine Fiscal and Monetary Problems in Developing States Proceedings of Third Rehoveth Conference New York: Praeger 1967
- Gonzalez-Vega, C. "Interest Rate Policies, Agricultural Credit and Income Distribution in Latin America" Columbus: Ohio State University Discussion Paper No. 3 Colloquium on Rural Finance, World Bank Washington, D.C. September 1981
- "Credit Rationing Behavior of Agriculture Lenders: The Iron Law of Interest Rate Restrictions" Columbus: Ohio State University Discussion Paper No. 9 Colloquium on Rural Finance, World Bank Washington, D.C. September 1981a
- Goodfriend, M. "A Model of Money Stock Determination with Loan Demand and a Bank System Balance Sheet Constraint" pp.3-16 in Goodfriend 1987
- Monetary Policy in Practice Richmond: Federal Reserve Bank of Richmond 1987
- and W. Whelpley "Federal Funds" Ch.2 in (Eds.) Cook and Rowe 1986
- Goodhart, C.A.E. The Evolution of Central Banks Cambridge: The MIT Press 1988
- Money, Information and Uncertainty 2nd. Edition. Cambridge: The MIT Press 1989
- Gordon, R.J. "Output Fluctuations and Gradual Price Adjustment" Journal of Economic Literature vol.XIX, June 1981:493-530
- Grant-Suttie, I. and H. Mehran "Relations Between a Central Bank and the Central Government" IMF Central Banking Seminar 1982:27-42
- Green, R.H. "The Role of the State as an Agent of Economic and Social Development in the Least Developed Countries" Journal of Development Planning no.6, 1974:15-38

- Greene, J. "Inflation in African Countries: General Issues and Effect on the Financial Sector" IMF Working Paper WP/89/86, October 19, 1989
- Guidetti, P.E. "Currency Substitution and Financial Innovation" IMF Working Paper WP/89/39 May 8, 1989
- Gulhati, R. Malawi Promising Reforms, Bad Luck EDI Development Policy Case Series Analytical Case Studies, No.3 The World Bank, Washington D.C. 1989
- Gurley, J.G. and E.S. Shaw "Financial Aspects of Economic Development" American Economic Review vol.45, September 1955:513-538
- "Financial Intermediaries and the Savings-Investment Process" Journal of Finance vol.XI, 1956:257-276
- "Financial Structure and Development" Economic Development and Cultural Change vol.15, no.3, April 1967:257-268
- Gut, R.E. "Towards the Twenty-First Century: New Strategies and Perspectives for Banking" Ch. 7 in (Ed.) Z. Mikdashi 1990
- Hallwood, P. and R. MacDonald International Money Theory, Evidence and Institutions Oxford: Basil Blackwell 1986
- Harberger, A.C. "A Primer on Inflation" Journal of Money, Credit, and Banking vol.10, no.4, November 1978:505-521 [Reprinted in (Eds.) Coats and Khathkate 1980]
- Harrington, R.L. "The Importance of Competition for Credit Control" in (Eds.) H.G. Johnson and A.R. Nobay 1974
- Haverman, R.H. The Economics of the Public Sector New York: John Wiley & Sons 1970
- Hayek, F.A. "The Use of Knowledge in Society" American Economic Review vol.XXXV, no.4, September 1945:519-530
- Herrick, B. and C.P. Kindleberger Economic Development 4th Edn. New York: McGraw-Hill 1983
- Hetzel, R.L. "Central Banks' Independence in Historical Perspective: A Review Essay" Journal of Monetary Economics vol.25, 1990:165-176
- Hicks, J.R. Critical Essays in Monetary Theory Oxford: Clarendon Press 1967
- Hitchcock, F.L. "The Distribution of a Product from Several Sources to Numerous Localities" Journal of Mathematics and Physics vol.20, 1941:224-230
- Ho, R.Y-K, Y-H. Lui, and D.W-W. Cheung "The Money Market in Hong Kong" (draft) Hong Kong Baptist College 1990
- Hodgman D.R. (Ed.) The Political Economy of Monetary

- Policy: National and International Aspects
Conference Series No. 26 Federal Reserve
Bank of Boston 1983
- and R.W. Resek "Determinants of Monetary
Policy in France, The Federal Republic of
Germany, Italy, and the United Kingdom:
A Comparative Analysis" in (Ed.) Hodgman 1983
- Honohan, P. "Senegalese Banking System Reform: The
Macroeconomic and Monetary Policy Context"
World Bank (draft) May 1988
- "Monetary Cooperation in the CFA Zone"
Policy, Research, and External Affairs
Working Papers The World Bank March 1990
- Hoskins, W.L. "Rethinking the Regulatory Response to
Risk-Taking in Banking" FRBC economic
commentary June 1, 1989
- "Payment System Risk and Financial Reform"
FRBC economic commentary August 1, 1990
- Hugon, P. "The Impact of Adjustment Policies on African
Informal Financial Networks" Conference on
Policy Reform and Financial Systems in Sub-
Saharan Africa Washington June 20-22, 1989
- Humphage, O.F. "A Hitch-hiker's Guide to International
Macroeconomic Policy Coordination" FRBC
Economic Review vol.26, no.1, 1990:2-14
- Humphrey, T.M. "The Classical Concept of the Lender of
Last Resort" in Essays on Inflation 5th
Edn. Richmond: Federal Reserve Bank of
Richmond 1986
- Hyden, G. No Shortcuts to Progress: African Development
Management in Perspective Berkeley: University
of California Press 1983
- IMF IMF Institute: Financial Policy Workshops
The Case of Kenya Washington D.C.:
International Monetary Fund 1981
- "A Review of CFA Franc Arrangements" International
Monetary Fund SM/90/136 July 9, 1990
- Iyer, R.R. "The 'Macro-Economic' Study of the Public
Enterprise Sector" Economic and Political
Weekly vol.XX, no.21 May 25, 1985:M65-74
- Johnson, H.G. "Planning and the Market in Economic
Development" Ch. VII in Money Trade and
Economic Growth Cambridge: Harvard
University Press 1967
- "The Case for Flexible Exchange Rates"
Federal Reserve Bank of St. Louis vol.52,
1970:12-24
- "Problems of Efficiency in Monetary Management"
Journal of Political Economy vol.76, no.5:971-980
[Reprinted in Johnson Further Essays in Monetary
Economics Cambridge: Harvard University Press 1973]
- "Some Aspects of the Theory of Economic Policy

- in a World of Capital Mobility" Ch. 6 in Further Essays in Monetary Economics Cambridge: Harvard University Press 1973
- "The Monetary Approach to Balance-of-Payments Theory" Ch. 9 in Further Essays in Monetary Economics Cambridge: Harvard University Press 1973
- "Problems of Stabilization Policy in an Integrated World Economy" Ch. 14 in Further Essays in Monetary Economics Cambridge: Harvard University Press 1973
- and A.R. Nobay (Eds.) Issues in Monetary Economics London: Oxford University Press 1974
- Johnson, R.A. "Monetary Policy -- The Changing Environment" Reserve Bank of Australia Bulletin June 1985:1-5
- "Reflections on Some Issues for Monetary Policy" Reserve Bank of Australia Bulletin November 1986:1-3
- "The Reserve Bank - Its Dual Role - Monetary Management and Financial Stability" Reserve Bank of Australia Bulletin June 1988:1-4
- Johnston, R.B. "Monetary Policy Instruments for Developing Countries" World Bank seminar (no date)
- and O.P. Brekk "Monetary Control Procedures and Financial Reform: Approaches, Issues, and Recent Experiences in Developing Countries" IMF Working Paper, June 2, 1989
- Jordan, J.L. "Elements of Money Stock Determination" Federal Reserve Bank of St. Louis Review Oct. 1969
- Jucker-Fleetwood, E.E. Money and Finance in Africa London: Allen and Unwin 1964
- Kane, E.J. "The Political Economy of Subsidizing Agricultural Credit in Developing Countries" Columbus: Ohio State University Discussion Paper No.2 Colloquium on Rural Finance, World Bank Washington, D.C. September 1981
- Kang, M-S, and J-B Choi "The Money Market in Korea" Korea Development Institute (draft) April 1990
- Kareken, J.H. "The Federal Reserve's Modus Operandi" in Controlling Monetary Aggregates Conference Series No. 1 Federal Reserve Bank of Boston 1969:57-63
- "Deposit Insurance Reform or, Deregulation Is the Cart, Not the Horse" FRBM Quarterly Review vol.7, no.2, 1983:1-9 [Reprinted in FRBM Quarterly Review Winter 1990:3-11]
- Kaufman, G.G. The U.S. Financial System Money, Markets and Institutions 4th Edition Englewood Cliffs: Prentice Hall 1989
- Kenen, P.B. "The Role of Monetary Policy in Developing

- Countries" in CBG 1978
- Keynes, J.M. The General Theory of Interest, Money and Employment New York: Harcourt, Brace 1936
- "Alternative Aims in Monetary Policy" Ch.4
in Tract on Monetary Reform Cambridge:
Macmillan for The Royal Society 1971
- Khatkhate, D.R. "Evolving Open Market Operations in
a Developing Economy: The Taiwan Experience"
in (Ed.) Ayre 1977
- Killick, T. The Adaptive Economy: Adjustment Policies
in Low-Income Countries Washington D.C.:
The World Bank draft 1991
- Kindleberger, C.P. International Capital Movements New
York: Cambridge University Press 1987
- King, S.R. "Monetary Transmission Through Bank Loans of
Bank Liabilities?" Journal of Money, Credit,
and Banking vol.18, no.3, August 1986:290-303
- Kitchen, R.L. Finance for the Developing Countries Chichester:
John Wiley & Sons 1986
- Klein, L.R. "What Kind of Macroeconomic Model for Developing
Economies" The Econometric Annual of the Indian
Economic Journal vol.xiii, no.2, 1965 [Reprinted
in Coats and Khatkhate 1980]
- Krugman, P. "External Shocks and Domestic Policy
Responses" Ch.4 in (Eds.) Dornbusch and
Helmers 1988
- Laidler, D.W. The Demand for Money -- Theories and
Evidence New York: International Textbook
Co. 1969
- "The Influence of Money on Economic
Activity -- A Survey of Some Current
Problems" Ch. IV in (Eds.) Clayton,
Gilbert and Sedgwick 1971
- "Money and Money Income: An Essay on the
'Transmission Mechanism'" Journal of Monetary
Economics vol.4, 1978:151-191
- Lamfalussy, A. "The Changing Environment of Central
Bank Policy" American Economic Review
vol.75, no.2, May 1985:409-413
- Lange, O. Economic Development, Planning and
International Cooperation Cairo: Central
Bank of Egypt 1961
- Lavoie, M. "Credit and Money: The Dynamic Circuit,
Overdraft Economics, and Post-Keynesian Economics"
Ch. 4 in (Ed.) M. Jarsulic Money and Macro Policy
Boston: Kluwer-Nijhoff Publishing 1985
- Le Fort, G.R. "Financial Crisis in Developing Countries
and Structural Weaknesses of the Financial
System" IMF Working Paper WP/89/33
April 18, 1989
- Lee, T.H. and S. Han "On Measuring the Relative Size of
the Unregulated to the Regulated Money

- Market over Time" Journal of Development Economics vol. 33, 1990:53-65
- Leite, S. P. and V. Sundararajan "Issues in Interest Rate Management and Liberalization" IMF Working Paper WP/90/12, March 1990
- Leonard, D.K. "The Political Realities of African Management" World Development vol.15, no.7 1987:899-910
- Leontief, W. "The Structure of Development" Ch.4 in Input-Output Economics New York: Oxford University Press 1966
- LeRoy, S.F. "Efficient Capital Markets and Martingales" Journal of Economic Literature vol. XXVII, no.4, December 1989:1583-1621
- Levonian, M.E. "Early Warning Systems" FRBSF Weekly Letter October 12, 1990
- Ligeti, S. "Development Banks in the Developing Countries" Savings and Development vol. IX, no.3 1985:297-323
- Long, M.F. "A Note on Financial Theory and Economic Development" in (Eds.) J.D. Von Pischke, D.W. Adams and G. Donald 1983
- Lucas, R.E. "Econometric Policy Evaluation: A Critique" in (Eds.) K. Brunner and A.H. Meltzer The Phillips Curve and Labor Markets Carnegie-Rochester Conference Series on Public Policy vol.1, 1976
- Luttrell, C.B. "Interest Rate Controls -- Perspective, Purpose and Problems" FRBSI Review Sept. 1968:6-14
- Mabogunje, A.L. "The End of the Beginning: Reflections on the Development Crisis in Sub-Saharan Africa" Harvard Africa Lecture, Cambridge 1987
- MacDonald, R. Floating Exchange Rates: Theories and Evidence Boston: Unwin Hyman 1988
- Mahler, W. "The Growth of the Korean Capital Market" Finance and Development June 1990:41-43
- Maisel, S.J. "Improving Our System of Credit Allocation" in Credit Allocation Techniques and Monetary Policy Conference Series No. 11, Federal Reserve Bank of Boston 1973
- "Risk and Capital Adequacy in Banks" in The Regulation of Financial Institutions Conference Series No. 21 Federal Reserve Bank of Boston 1979
- Mankiw, N.G. "A Quick Refresher Course in Macroeconomics" Journal of Economic Literature vol. XXVIII, no.4, December 1990:1645-1660
- Maroni, Y. "The Role of Central Banks in the Development of Securities Markets" International Finance Discussion Papers No. 127, December 1978
- Mars, J. "Potentialities and Limitations of Monetary Policy" in (Ed.) D. Krivine Fiscal and Monetary Problems of Developing States New York: Praeger

- Publishers 1967
- Mathieson, D.J. "Exchange Rate Arrangements and Monetary Policy" IMF Working Paper WP/88/14, 1988
 ----- and L. Rojas-Suarez, "Financial Market Integration and Exchange Rate Policy," IMF Working Paper, January 1990.
- Mayer, T., J.S. Duesenberry, and R.Z. Aliber Money, Banking, and The Economy 4th Edition New York: W.W. Norton 1990
- McAuliffe, C.J. and M.F. McPherson "Exchange Rate Reform in The Gambia: Performance and Prospects" Development Discussion Paper No. 349, HIID Cambridge, July 1990
- McCallum, B.T. "Credibility and Monetary Policy" in Price Stability and Public Policy A Symposium Sponsored by The Federal Reserve Bank of Kansas City, Jackson Hole, August 1984
- McKinnon, R.I. Money and Capital in Economic Development Washington D.C.: The Brookings Institution 1973
 ----- "The Exchange Rate and Macroeconomic Policy: Changing Postwar Perceptions" Journal of Economic Literature vol. XIX, June 1981:531-557
 ----- "Financial Liberalization in Retrospect: Interest Rate Policies in LDCs" Economic Growth Center, Yale University April 1986
- McNees, S.K. "Man vs Model? The Role of Judgment in Forecasting" New England Economic Review July/August 1990:41-52
- McPherson, M.F. and J.S. Duesenberry "Improving Monetary Management in The Gambia" HIID, Cambridge (draft) 1991
 ----- and S.C. Radelet "Economic Reform in The Gambia: Policies, Politics, Aid, and Luck" in (Eds.) D. Perkins and M. Roemer The Reform of Economic Systems in Developing Countries Cambridge: Harvard University Press 1991
- Meek, P. Open Market Operations New York: Federal Reserve Bank of New York 1985
 ----- "The Central Bank's Role in Monetary Policy and Money Market Development," (Draft) May 8, 1989
 ----- "Central Bank Liquidity Management and the Money Market" (Draft) April 26, 1990
 ----- "Monetary Policy and Debt Management" mimeo 1990a
- Meier, G.M. Leading Issues in Economic Development 3rd Edition New York: Oxford University Press 1976
 ----- (Ed.) pricing policy for development management Baltimore: The Johns Hopkins University Press for The World Bank 1983
 ----- Leading Issues in Economic Development 5th Edition New York: Oxford University Press 1989
- Meulendyke, A-M. "Monetary Policy Instruments for Developing Countries" (Draft) Federal Reserve Bank of New

York October 20, 1986

- "Forecasting Bank Reserve Needs" Presentation
to World Bank Seminar on Monetary Policy Instrument
for Developing Countries, May 18, 1990
- Mikdashi, Z. (Ed.) Bankers' and Public Authorities'
Management of Risks New York: St.
Martin's Press 1990
- "Bankers' and Regulators' Management of
Risks" Ch. 12 in (Ed.) Z. Mikdashi 1990
- Montiel, P. "The Transmission Mechanism for Monetary Policy in
Developing Countries," IMF Working Paper, May 1990
- Moore, B.J. "A simple model of bank intermediation"
Journal of Post-Keynesian Economics vol.12,
no.1, Fall 1989:10-28
- Muscatelli, A. and D. Vines "Macroeconomic Interactions
Between the North and South" Ch.10 in (Eds.)
R.C. Bryant et al. Macroeconomic Policies in
an Interdependent World Washington D.C.:
International Monetary Fund 1989
- Myint, Hla The Economics of Developing Countries
New York: Praeger Publishers 1964
- NDIC Nigeria Deposit Insurance Corporation 1989
Annual Report Lagos: Academy Press 1990
- Nashashibi, K., H. Lorie, and A. Doize "Fiscal Deficits in
UMOA Countries: Analysis and Possibilities for
Reform" International Monetary Fund Washington
D.C. July 24, 1990
- Nelson, E.R. "Monetary Management in Sub-Saharan Africa
Senegal" Development Alternatives, Bethesda
(draft) April 1990
- Nelson, J. (Ed.) Economic Crisis and Policy Choice
Princeton: Princeton University Press 1990
- Neuberger, J.A. "How To Close Troubled Banks" FRBSF
Weekly Letter December 7, 1990
- Newlyn, W.T. Money in an African Context London:
Oxford University Press 1967
- Newlyn, W.T. The Financing of Economic Development
Oxford: Clarendon Press 1977
- "The Financial Constraint" Ch.1 in
(Ed.) Newlyn 1977
- "Intermediation and Credit Creation"
Ch.2 in W.T. Newlyn 1977
- Niepoort, E., R. Hicks, and M. Swinburne "The Monetary Policy
Framework in Malawi: Improving Instruments and
Markets" International Monetary Fund Central
Banking Department August 1989
- Nowak, M. "Quantitative Controls and Unofficial Markets
in Foreign Exchange" IMF Staff Papers vol. 31,
no. 2, June 1984:404-431
- OAU The Lagos Plan of Action for the Implementation
of the Monrovia Strategy for the Economic
Development of Africa Lagos: Organisation

- of African Unity, April 1980
- Onoh, J.K. Money and Banking in Africa New York: Longman 1982
- Ouattara, A. "The Instruments of Monetary Policy -- their Use and Effectiveness in Developing Countries" in CBG 1978
- Parfitt, T.W. and S.P. Riley The African Debt Crisis New York: Rcutledge 1989
- Park, Y-C. "Some Current Issues on the Transmission Process of Monetary Policy" IMF Staff Papers vol. XIX, no.1, March 1972: 1-43
- "The Ability of the Monetary Authorities to Control the Stock of Money in LDCs" IMF Staff Papers vol.xx, no.2, July 1973 [Reprinted in (Eds.) Coats and Khatkate 1980]
- Patrick, H.T. "Financial Development and Economic Growth in Underdeveloped Countries" Economic Development and Cultural Change vol.14, no.2, January 1966
- Paulson, Jo Ann "African Financial Systems During Policy Reforms: Overview of the Issues" Department of Agricultural and Applied Economics University of Minnesota, St. Paul December 1988
- "Some Unresolved Issues in African Financial Reforms," Paper presented for USAID Conference on Policy Reform and Financial Sector Research in Africa, Washington, D.C., June 20-22, 1989
- Pierce, J.L. and T.D. Thomson "Some Issues in Controlling the Stock of Money" in Controlling Monetary Aggregates II: The Implementation Conference Series No.9 Federal Reserve Bank of Boston 1972
- Plane, P. "Financial Crises and the Process of Adjustment in the Franc Zone: the Experience of the West African Monetary Union," Paper presented at the USAID Conference on Policy Reform and Financial Sector Research in Africa, Washington D.C., June 20-22, 1989
- Polak, J.J. "Monetary Analysis of Income Formation and Payments Problems" IMF Staff Papers vol.7, November 1957
- Polizatto, V.P. "Prudential Regulation and Banking Supervision Building an Institutional Framework for Banks" Policy, Planning and Research Working Papers The World Bank, Washington D.C. January 1990
- Porter, R.C. and S.I. Ranney "An Eclectic Model of Recent LDC Macroeconomic Policy Analyses" World Development vol.10, no.9, September 1982:751-766
- Pozdena, R.J. "Recapitalizing the Banking System" FRBSF Weekly Letter March 8th, 1991
- Pyle, D.H. "On the Theory of Financial Intermediation" Journal of Finance vol.6, 1971:737-747

- Quirk, P.J. "The Case for Open Foreign Exchange Systems" Finance & Development vol.26,no.2, June 1989: 30-33
- Robinson, S. "Multisectoral Models" Ch.18 in (Eds.) Chenery and Srinivasan 1989
- Rocha, R. de Rezendi "The Costs of Intermediation in Developing Countries: A Preliminary Investigation" in High Interest Rate Spreads and the Costs of Intermediation Two Studies Washington D.C. The World Bank 1986
- Roe, A. and P.A. Popiel "Managing Financial Adjustment in Middle-Income Countries" World Bank EDI Policy Seminar Report No. 11, Synthesis of a Policy Roundtable held in Istanbul, July 6-9, 1987.
- Roemer, M. "The Macroeconomics of Counterpart Funds Revisited" World Development vol. 17, no.6 June 1989:795-807
----- and S.C. Radelet "Macroeconomic Reform in Developing Countries" in (Eds.) D. Perkins and M. Roemer The Reform of Economic Systems in Developing Countries Cambridge: Harvard University Press 1991
- Romer, C.D. and D.H. Romer "New Evidence on the Monetary Transmission Mechanism" (draft) University of California, May 1990.
- Ruding, H.O. "Guidelines for Economic Rigour, Financial Health and Monetary Order: The Work of the Minister of Finance" Ch.10 in (Ed.) Z. Mikdashi 1990
- Samolyk, K.A. "In Search of the Elusive Credit View: Testing for a Credit Channel in Modern Great Britain" FRBC Economic Review vol.26, no.2, 1990:16-28
- Sandbrook, R. The Politics of Africa's Economic Stagnation Cambridge: Cambridge University Press 1987
----- "Taming the African Leviathan" World Policy Journal 1990:673-701
- Sayers, R.S. Central Banking after Bagehot Oxford: Clarendon Press 1957
- Scammell, W.M. The Stability of the International Monetary System Houndmills: Macmillan Education Ltd. 1987
- Schelling, T.C. Micromotives and Macrobehavior New York: W.W. Norton 1978
- Schiller, R.J. and J. Huston McCulloch "The Term Structure of Interest Rates" Ch. 15 in (Eds.) Friedman and Hahn 1990
- Schumpeter, J.S. History of Economic Analysis New York: Oxford University Press 1954
- Schreft, S.L. "Credit Controls: 1980" FRBR Economic Review vol.76/6, Nov./Dec. 1990:25-55
- Seballos, L.D. and J.B. Thomson "Underlying Causes of

- Commercial Bank Failures in the 1980s"
FRBC economic commentary September 1, 1990
- Seidman, L.W. "Deposit Insurance and Banking Efficiency"
Ch. 1 in (Ed.) Z. Mikdashi 1990
- Shaffer, J.D., M. Weber, H. Riley, and J. Staatz
"Influencing the Design of Marketing Systems
to Promote Development in Third World Countries"
Paper Presented at ICRISAT, Hyderabad, India
October 1983
- Shaw, E.S. Financial Deepening in Economic Development
New York: Oxford University Press 1973
- Shaw, R. "Macroeconomics in an Open Economy" Ch. 3
in Hallwood and MacDonald 1986
- Snoek, H. "Problems of Bank Supervision in LDCs" Finance &
Development December 1989:14-16
- Soles R.E. "Successful Rural Credit Projects in Latin America"
Development Digest vol.XVI, no.3, July 1978:15-24
- Stark, T. and H. Taylor "Activist Monetary Policy for Good
or Evil? The New Keynesians vs. the New Classics"
Federal Reserve Bank of Philadelphia Business Review
March-April 1991:17-25
- Starr, R.M. "On the Theoretical Foundations of Financial
Intermediation and Secondary Financial Markets"
International Monetary Cooperation Essays in
Honor of Henry C. Wallich Essays in International
Finance No. 169, December 1987:53-60
- Strong, B. "Federal Reserve Control of Credit"
FRBNY Quarterly Review Special Issue
75th Anniversary 1989:6-14 [Essay first
published in 1922]
- Sundararajan, V. and L. Molho. "Financial Reform and Monetary
Control in Indonesia," IMF Working Paper
WP/88/34, January 20, 1988
- Swamy, P.A.V.B. and G.S. Tavlas "Financial Deregulation,
the Demand for Money, and Monetary Policy in
Australia" IMF Staff Papers vol.36, no.1, March
1989:63-101
- Swinburne, M. "Issues in Money Market Development:
Speaking Notes" IMF mimeo October 1989
- Swoboda, A.K. "Monetary Policy Under Fixed Exchange
Rates: Effectiveness, The Speed of Adjustment,
and Proper Use" in (Eds.) Johnson and Nobay
1974:52-74
- Tait, A.A. "IMF Advice Fiscal Policy" IMF Working Paper
WP/89/87 October 23, 1989
- Tanzi, V. and M.I. Blejer "Inflation, Interest Rate Policy,
and Currency Substitutions in Developing
Economies: A Discussion of Some Major Issues"
World Development vol.10, no.9, September
1982:781-789
- Taylor, L. "Theoretical Foundations and Technical
Implications" Ch. III in (Eds.)

- C.R. Blitzer, P.B. Clark and L. Taylor 1975
Macro Models for Developing Countries
 New York: McGraw-Hill Book Co. 1979
- Teigen, R.L. "The Demand for and Supply of Money"
 in (Eds.) W.L. Smith and R.L. Teigen
Readings in money, national income,
 and stabilization policy Homewood:
 Richard D. Irwin 1970
- Tenconi, R. "A New Monetary and Credit Policy for BCEAO"
 IMF mimeo 1990
- Thomson, J.B. "Using Market Incentives to Reform Bank
 Regulation and Federal Deposit Insurance"
 FRBC Economic Review vol.26, no.1, 1990:28-37
 ----- "Predicting Bank Failures in the 1980s"
 FRBC Economic Review vol.27, no.1, 1991:9-20
- Tobin, J. "Commercial Banks as 'Creators' of Money"
 in (Ed.) D. Carson Banking and Monetary
 Studies Homewood: Richard Irwin 1963:408-419
 ----- "The Theory of Portfolio Selection" in (Eds)
 F.H. Hahn and F.R. Brechling The Theory of
 Interest Rates London: Macmillan 1965:Ch.1
 ----- "Deposit Interest Ceilings as a Monetary
 Control" Journal of Money, Credit, and
 Banking vol.11, no.1, Feb. 1970:4-14
 ----- "Monetary Policies and the Economy: The
 Transmission Mechanism," Southern Economic
 Journal vol.44(3), 1978:421-431
- Tun Wai, U "Role of Money Market in Supplementing
 Monetary Policy" in (Ed.) D. Krivine
Fiscal and Monetary Problems in Developing
 States New York: Praeger 1967
- UMOA "La Nouvelle Politique de la Monnaie et
 du Cr dit de la Banque Centrale des Etats
 de L'Afrique de L'Ouest" Union Mon taire
 Ouest Africaine, Dakar October 1989
- United Nations Survey of Economic and Social Conditions in
 Africa 1983-1984 Addis Ababa: Economic Commission
 for Africa, April 1985
 ----- Report on the Preparatory Committee of the
 Whole for the Special Session of the General
 Assembly on the Critical Economic Situation
 in Africa United Nations 13th Special Session
 Supplement No.1 (A/S-13/4) June 1986
 ----- African Alternative Framework to Structural
 Adjustment Programmes for Socio-Economic Recovery
 and Transformation (AAF-SAP) United Nations
 Economic Commission for Africa E/ECA/CM.15/6/
 Rev.3, Addis Ababa, 1989
- Vernon-Wortzel H. and L.H. Wortzel "Privatization: Not the
 Only Answer" World Development vol.17, no.5,
 1989:633-641
- Versluysen, E. The Political Economy of International

- Finance New York: St. Martin's Press 1981
- Villanueva, D. "Issues in Financial Sector Reform"
Finance & Development March 1988 reprinted in
The Path to Reform Issues and Experiences
September 1990:17-19
- Von Pischke, J.D., D. Adams, and G. Donald (Eds.)
Rural Financial Markets in Developing
Countries Baltimore: Johns Hopkins Press
for the World Bank 1983
- Walsh, C.E. "The Effects of Alternative Operating
Procedures on Economic and Financial
Relationships" in Monetary Policy Issues
in the 1980s A Symposium Sponsored by the
Federal Reserve Bank of Kansas City,
Jackson Hole August 1982
- Weitzman, M.L. "Prices vs. Quantities" The Review of
Economic Studies vol.XLI, no.4, October
1974:477-491
- Westphal, L.E. "Planning With Economies of Scale" Ch. XI
in (Eds.) Blitzer, Clark and Taylor 1975
- White, L.J. "The Theory of Financial Regulation in the
New Environment of Liberalization" Paper presented
at Seminar on Financial Sector Liberalization
and Regulation (Harvard Law School) Cambridge
June, 1990
- Williamson, J. "The Exchange Rate System" Institute for
International Economics Washington D.C.
Policy Analyses in International Economics
5, September 1983, Revised June 1985
- and D.R. Lessard "Capital Flight: The Problem
and Policy Responses" Institute for International
Economics Policy Analyses in International
Economics no.23, November 1987
- Wolf, C.R. "A Theory of Non-Market Failure" Journal
of Law and Economics vol.22, no.1, April
1979:107-139
- Markets or Governments: Choosing between
Imperfect Alternatives Cambridge: The
MIT Press 1990
- World Bank World Development Report 1985
Washington D.C.: The World Bank 1985
- The Gambia Financial Sector Review Report
No. 4766-GM West Africa Region World Bank
Washington D.C. April 30, 1985a
- UMOA Banking and Financial Sector Reforms An
Analytical Framework Paper draft World Bank
Washington D.C. August 1988
- World Development Report 1989 Washington
D.C.: The World Bank 1989
- Sub-Saharan Africa From Crisis to Sustainable
Growth A Long-Term Perspective Study
Washington D.C.: The World Bank 1989a

- Republic of Senegal: Financial Sector
Adjustment Program World Bank, Washington
D.C. Report No. P-5183-SE November 28, 1989b
- World Tables 1991 Baltimore: The Johns Hopkins
University Press 1991
- Young, R.A. Instruments of Monetary Policy in the United
States Washington D.C.: International Monetary
Fund 1973
- Younger, S.D. "Monetary Management in Ghana" (draft)
November 1990
- Youngjohns, B.J. "Cooperatives and Credit -- A Re-Examination"
Development Digest vol.XX, no.1, Jan. 1982:3-9

Endnotes:

1. The final phases of financial deregulation in the United States were not enacted until the passage of the Depository Institutions Deregulation and Monetary Control Act of 1980. Interest rate ceilings of some form persisted until Regulation Q, which determined maximum deposit rates, was removed in March 1986. The Regulation was first devised when Congress passed the Banking Act 1933. This Act required the Federal Reserve to put ceilings on interest rates. For many years Regulation Q was interpreted liberally so as not to create serious distortions. However, in 1966, as a means of protecting the thrift institutions from competition, the Fed lowered the Regulation Q ceiling. The distortions thereby have been well documented (Luttrell 1968; Tobin 1970; Friedman 1970; Mayer, Duesenberry and Aliber 1990: 95-97).
2. Credit ceilings are consistent with numerous macroeconomic objectives. For instance, a central bank may use the ceilings as a purely defensive operation to offset pressure on the exchange rate or price level. More ambitious policy makers may seek to provide a "nominal anchor" for the economy. Such an "anchor" is based on a commitment by the authorities to maintain a fixed value, or a predetermined nominal growth path for a key macroeconomic variable (Coats 1989). The idea generalizes the monetarist view that a fixed rate of money growth provides a stable background for the development of the real economy.
3. The idea is a consequence of the proposition that in a market, prices and quantities are dual (Weitzman 1974). Stated another way, the control of prices or the control of quantities has exactly the same information for determining the allocation of resources. Let p and q represent price and quantity, respectively, and $c(\cdot)$ be a cost function, then the problems of (i) $\max \{p \cdot q - c(q)\}$; and (ii) $\min \{c(q)\}$ s.t. $p \cdot q > Q$ are equivalent.
4. A case in point is the United States Credit Control Act of 1969. Until 1980, selective credit controls had not been used since 1952. Nonetheless, the Act had been retained. As inflation accelerated during 1979 and 1980, the Carter Administration was under pressure to act. President Carter imposed credit controls in March 1980. The efficacy of the controls has been widely debated (Schreft 1990).
5. A major change in the growth performance of the Ghanaian economy had already occurred during the 1960s. Kwame Nkrumah's had a vision of Ghana as a leading force in pan-African development. Within a decade, however, the public sector had become seriously overextended. Major economic disruptions only began, however, in the 1970s when government deficit spending and credit creation

accelerated and public confidence collapsed.

6. These data, which show that on average, the Nigerian economy was accumulating foreign assets, raise the issue of why Nigeria's external debt is so heavy (approximately \$33 billion in 1990). One explanation is private arbitrage. The overvalued exchange rate encouraged private individuals to divert their resources abroad. To offset this capital outflow, the Nigerian government borrowed abroad.

7. With the general decline in Senegal's international credit-worthiness and the collapse of the state-owned banks, the government is now finding that the credit limit imposed by the BCEAO is a binding constraint. Indeed, the government has been incurring domestic arrears because it cannot raise the finance from the BCEAO.

8. Reserve money (or the monetary base) is total currency outstanding plus reserve deposits with the central bank. Bank reserves consist of vault cash and deposits with the central bank (FRB Chicago 1982:4-5; Mayer, Duesenberry and Aliber 1990:Ch.12).

9. Interest rates serve a variety of functions. They allocate and ration financial resources; provide an index of the opportunity cost of current over future consumption; guide resources into physical or portfolio investment; and measure the potential opportunity costs of currency substitution. Furthermore, the structure of interest rates, both over time and by category of risk asset, determines the composition of investors' portfolios.

10. As noted below, such a recognition will explicitly re-connect the operation of monetary policy to the real side of the economy, particularly the limits imposed by the supply of domestic real savings.

11. Additional demand would be satisfied if the unused resources could be moved into the production process. That would require changes in exchange rates and other relative prices which, under current circumstances in SSA, would require structural adjustment. Such changes take time and do not satisfy the current year's excess demand.

12. The structure of interest rates is related to the portfolio decisions of the financial institutions. These depend on perceptions of risk, liquidity preference, the availability of alternative investment opportunities, and transactions costs. Determinants of the structure of interest rates continues to be widely debated. Goodhart (1989:Ch.XI), Abken (1990) and Schiller and McCulloch (1990) provide detailed reviews.

13. In The Gambia, the economic difficulties prior to the float of the dalasi in February 1986 led to large-scale currency substitution. Local transactions were regularly conducted in CFA francs, pounds, or dollars. With the interest rate liberalization, the exchange rate reform, and the subsequent sharp drop in inflation, a large amount of resources shifted out of foreign currency into dalasis. Activity in the parallel foreign exchange market declined dramatically (McAuliffe and McPherson 1990). Statistically, these changes showed up as a large increase in the errors and omissions item in the balance of payments and the decline in Gambian residents' holdings of foreign deposits (International Financial Statistics Yearbook 1989 1990:83,367).

14. Indeed, accommodation implies that the supply of money is demand-determined.

15. To illustrate, the consumer price data in the countries we studied have the following bases:

The Gambia	1974=100
Nigeria	1975=100
Ghana	1977=100
Senegal	1967=100
Malawi	1980=100

16. The relationship between broad money, M2, and reserve money, (R + C) where R is bank reserves held at the central bank and C is currency in the hands of the public, is:

$$M2 = \{(1+k)/[rr+e+k]\} \cdot (R+C)$$

where: k currency to deposit ratio;
rr required reserves to deposit ratio; and
e excess reserves to deposit ratio.

In principle, it is possible to derive a wide variety of money multipliers (Goodfriend 1987:3-16; Goodhart 1989:130-133; Mayer, Duesenberry and Aliber 1990:Ch.11).

17. The experience in developed countries is similar. Pierce and Thomson (1972) traced the instability in the multiplier using a simple money demand and supply model. Other discussions of instability appear in Goodhart (1989:130-137) and Mayer, Duesenberry, and Aliber (1990:212-213).

18. This is a major (though largely unrecognized) problem in many countries of SSA. The substantial decline in real income and financial disintermediation over the last decade would require the central bank to remove reserves from the system in order to meet a predetermined inflation target. Inflation is higher to the extent that these reserves have not been removed.

19. The central bank is in a position to refinance loans at low interest rates because it does not pay interest on its liabilities (primarily currency) but receives interest on its assets. Refinanced loans need not be subsidized, however.

20. In its early years, the Federal Reserve System in the United States supplied a large proportion of bank reserves by means of the discount window (Strong 1922). The Fed now discourages excessive access by banks to this facility (Meulendyke 1989:135-6; Mayer, Duesenberry and Aliber 1990:363-366).

21. The relationship between capital flows and the domestic money supply has been studied in many contexts. Selected examples include two and three gap models, monetary theories of the balance of payments, monetary policy under fixed and floating exchange rates, the efficacy of currency boards relative to central banks, the impact on bank regulation, the international transmission of inflation, determinants of the exchange rate, portfolio diversification, foreign debt, capital flight, and policy coordination are prominent examples (Polak 1957; Chenery and Bruno 1962; Myint 1964; Johnson 1973:Chs.6,9; Swoboda 1974; Fieleke 1978; Kenen 1978; McKinnon 1981; Dale 1984; Cooper 1985; Williamson 1985; Frenkel and Mussa 1985; Shaw 1986; Scammell 1987:Ch.7; Williamson and Lessard 1987; Kindleberger 1987; MacDonald 1988; Muscatelli and Vines 1989; Currie and Wren-Lewis 1989; Eaton 1989:1332-1333; Mathieson and Rojas-Suarez 1990; and Dornbusch and Giovannini 1990).

22. Up to a point, rising interest rates compensate lenders for increased risk. However, beyond a certain level higher interest rates compound the lender's risk because they raise the borrower's costs to levels which may trigger default. Many junk-bonds holders in the US are well aware of this phenomenon.

23. Analyses of the relative merits of participation in the CFA zone yield a progressively gloomier picture (Bhatia 1985; Devarajan and de Melo 1987, 1990; Plane 1989; Honohan 1990; and Nashashibi, Lorie and Doize 1990). With the CFA supported by the French Treasury, interest rate differentials between Senegal and Paris used to be relatively unimportant determinants of capital flows. Over recent years, confidence in the sustainability of the exchange rate system has eroded. Interest rate differentials and capital controls are not enough to discourage capital outflow. The difficulties have been highlighted by successive reports from the French Treasury (CMZF 1988) and a recent assessment of the Franc zone by the International Monetary Fund (IMF 1990).

24. Under procedures carried over from the colonial period, the Budget is the legal warrant which sanctions expenditure for each budget item. The budget, however, only stipulates an upper limit on expenditure. It does not indicate when (or if) that expenditure will occur. Some control is exercised by holding ministries to

quarterly or even monthly allocations. These are administratively cumbersome and divert the attention of senior government officials from more important aspects of fiscal and monetary policy.

25. The budgetary charges for outstanding treasury bills overstate the real cost of the tender system. Since the main contribution to monetary growth has come from foreign assets, treasury bills have served to sterilize capital inflow. The domestic liquidity generated when the central bank purchases foreign exchange has been (partially) absorbed by treasury bills. In effect, the domestic interest paid by government on T Bills is largely offset by the interest earned by the central bank on its holdings of foreign assets.

26. Park (1972:1) noted that the transmission mechanism explained "how monetary influences affect real output, employment, and the price level." Tobin (1978:461) stated that it was "the process by which monetary policies are transmitted into changes in expenditures for gross national product." The literature on the subject is particularly rich (Laidler 1971, 1978). It is becoming more so as the deregulation of the last decade modifies existing economic relationships (Brunner and Meltzer 1988; Goodhart 1989:Ch.12; Swamy and Tavlas 1989; Friedman 1989; Romer and Romer 1990; and Montiel 1990) and the "New Keynesians" debate the "New Classicals" regarding the efficacy of monetary policy takes on a new life (Stark and Taylor 1991).

27. The issue of "money vs. credit" has generated considerable debate. Several factors have been important. The textbook characterization of the money multiplier process has often been simplistic; the presumed ability of the central bank to determine the supply of money is overstated; the emphasis by "monetarists" on stable growth rates of money has focussed too much attention on bank liabilities; the "special" role accorded to banks has diverted attention from the economic imperatives which determine their behavior, i.e. like any other economic actors, they have to weigh the cost of funds (deposits, reserves) relative to their prospective return (loans, advances); and, finally, mainstream monetary economics has tended to neglect flow-of-funds analysis which treats financial assets and liabilities symmetrically. An early contribution to the modern "money vs. credit" debate was Tobin (1963) who pointed out that in order to expand their loans, banks had to attract additional resources (deposits or reserves). That is, "deposit creation" had to be supported by an equal expansion of bank assets. Moreover, like any other rational enterprise banks weigh the expected returns from those additional assets against the expected costs of the additional deposits. One implication of Tobin's analysis that has become a key element in later literature is that the money supply is endogenous. With banks seen as no longer acting mechanically to multiply up the reserves the central bank decides to supply, the argument that the central bank can control the money supply unravels. The potential

endogeneity of the money supply has been reinforced by a series of articles which argue that in fact "loans create deposits" (Lavoie 1985; King 1986; Gertler 1988; and Moore 1989). Other authors have focussed on credit in order to understand the dynamics of financial collapse. Samolyk (1990), for example, drew on the idea that a principal cause of the Depression was the collapse of credit (a point made by Keynes 1936:158) to examine the factors responsible for bankruptcies in the UK. The conclusion was that bankruptcy disrupts credit relationships which, in the absence of appropriate offsetting measures, provides the basis for multiple contractions in output and employment. Brunner and Meltzer (1988) made the same argument to support their view that the transmission mechanism depends on the interaction of both money and credit. Seen within a flow-of-funds model (Bosworth and Duesenberry 1973), this conclusion is obvious. The theoretical debate about money and credit is far from settled. In practical terms, however, money is not wholly endogenous or wholly exogenous and both sides of the balance sheet, i.e. money and credit, have to be dealt with.

28. The standard money demand analysis can be regarded as being part of a two asset "money vs. bonds" model. An implicit assumption is that all securities can be homogenized into a single "bond" so that if the money market is cleared the bond market must be cleared as well. The same reasoning applies to models which clear the bond or credit market without using the money market.

29. Recent evidence from a range of countries confirms this point. Deregulation in Canada, France, Italy, Germany, Japan and the UK has basically changed the way monetary policy affects the economy (Germany and Morton 1985; Batten et al. 1989). The experience in Australia has been similar (Johnson 1986; Swamy and Tavlas 1989).

30. There was an additional CFA 29.7 billion in unpaid interest. That is, the total loss by ONCAD was CFA 94 billion or \$416.3 million. The loss was approximately 17% of GDP.

31. In 1986, there were 30 commercial banks and 12 merchant banks in Nigeria. By end-September 1990, the number of commercial banks had increased to 56 and the number of merchant banks had increased to 44 (Ebhodaghe 1990:Table 1). In 1989 alone, 6 commercial banks, 10 merchant banks, 18 stock brokerage companies, and 52 bureaux de change were granted operating licenses (CBN 1990:50).

32. As a means of reducing the liquidity of the banking system, the Nigerian Government has engaged in periodic "liquidity sweeps." In 1989, all of the parastatals were required to move their accounts (approximately N8.3 billion or 15% of banking system credit) into the central bank. The ensuing loss of reserves created difficulties for many banks. The excess reserves were largely the result of government deficit spending.

33. Privatization and financial reform (as part of a larger program of structural adjustment) are complementary. Unfortunately, there has been a tendency to presume that privatization itself will make a major contribution to growth and reform. Iyer (1985) and Vernon-Wortzel and Wortzel (1989) observe that without fundamental changes in the way the enterprises are managed and the setting in which they operate, privatization can achieve little. Different ownership is not usually enough to address the problems (lack of clear goals, disorganization, fraud, and over-staffing) which led to the poor performance of these institutions in the first place (Hyden 1983; Leonard 1987).

34. The United States Savings and Loan debacle is instructive. Knowledge that the S&Ls were in deep trouble has existed for years. Indeed, Congress and the various regulatory agencies have made some special efforts to ease capital requirements, loss reporting provisions and other regulations in the hope that the situation would not unravel (Karekan 1983; Dotsey and Kuprianov 1990:10-19; Mayer, Duesenberry and Aliber 1990:98-100). The total cost of resolving the mess over thirty years has been estimated to range from \$300 to \$500 billion.

35. A World Bank review mission in 1983 (World Bank 1985) highlighted the precarious financial state of the GCDB and recommended remedial actions. These were agreed with government in early 1986. The initial steps was the establishment of the Managed Fund (of non-performing, government-guaranteed debt) in January 1987. The problems of GCDB's management and the bank's links with government were not addressed until late in 1988 after a special "diagnostic study" of the bank had been undertaken. Further obstruction and delay occurred into 1990 over the issue of who would manage the bank. Throughout the whole episode the dominant issue has been control. Senior government officials want to retain influence over the bank's lending. The donors do not want a support a rehabilitation effort in which such influence persists. They have been insisting that the government disengage from the bank. The process resembles a conventional "war of attrition" (Alesina and Drazen 1989).

36. When the Managed Fund was created in The Gambia in 1987, the GCDB was able to pay off an emergency loan to the central bank and meet its reserve requirements with some resources left over. These were immediately lent out to customers who were already heavily indebted to the bank. Within months, the GCDB was not able to meet its reserve requirements and turned again to the central bank for accommodation.

37. The collapse of the Gambia Merchant's Financial Institution in 1983 is an illustration. Even though no formal deposit insurance existed, the central bank paid off GMFI's customers and its inter-bank liabilities. In Ghana, the unwillingness of the Bank of Ghana to force the commercial banks into receivership represented de

facto deposit insurance. Among the study countries, only Nigeria has formal arrangements for deposit insurance.

38. In the US, the Resolution Trust Corporation which is overseeing the restructuring of the S&Ls is being funded through additional government borrowing.

39. Debate periodically arises over the macroeconomic impact of counterpart funds. Roemer (1988) recently offered further insights on the issue. The point which raises the most disagreement is whether the economic effects of spending counterpart funds are fundamentally different from the induced expenditures associated with any resource inflow from abroad. Under conditions of internal and external balance, the question is moot since all spending has an equivalent marginal impact. The problem emerges when there are imbalances. Under these circumstances, any additional government spending adds to the financial pressures on the economy.

40. An example is the Gambia Produce Marketing Board (GPMB). In 1988, the government used its counterpart balances at the central bank to retire D130.4 million (approximately 12% of GDP) of the GPMB's accumulated overdraft (D80.4 million) and provide support to cover anticipated operating losses (D50 million) in 1988/89. Under the IMF program, corresponding adjustments were made in the credit ceilings of the government and GPMB to reflect the transfer. The net impact on the money supply and volume of outstanding credit was zero. GPMB's net worth, however, increased sharply.

41. There was directed credit in Malawi also. However, the interlocking shareholdings of ADMARC, Lonrho, Press, and the two commercial banks tended to make the explicit allocation of credit redundant.

42. The country studies revealed a wide range of technical deficiencies which can be traced to the lack of staff capacity. A partial list includes:

- loan evaluation, monitoring and recovery
- deposit mobilization and formulation of a marketing strategy
- evaluation and registration of collateral
- quality of banking services
- internal audit
- staff training, motivation, and performance evaluation
- personnel administration
- cost control
- compliance with central bank directives
- corporate planning
- matching the maturities of assets and liabilities
- risk avoidance techniques

-- foreign exchange management.

43. Locating the loan contracts which were actually negotiated proved to be difficult. These had been stored with the ministry of justice.

44. As of September 1988, non-performing loans in the Senegalese banking system amounted to \$751 million. This was 48.5% of the total volume of outstanding bank loans (World Bank 1989b:4).

45. Some analysts distinguish different sub-markets. For instance, the money market is typically distinguished from the capital market according to whether the maturities of the instruments traded are less or more than one year (Cook and Rowe 1986; Meulendyke 1990).

46. The financial costs of creating institutions to operate in these markets is also low. To illustrate, when the Gambia Commercial and Development Bank was established, the government paid in capital of D1 million (approximately \$.5 million), required the GPMB and GCU to contribute a share, had its parastatal companies transfer their accounts to the GCDB, marshalled donor support for the bank, and transferred some staff from the ministry of finance. The direct resource costs of the whole operation for the government were extremely low. The subsequent costs, due primarily to fraud and mismanagement, however, have been inordinately high.

47. Many of the markets and associated institutions were established according to the principles of "supply-leading finance" (Patrick 1966; Meier 1976:267). The idea was that an appropriate institutional framework, consisting of development banks, and cooperatives supplemented by generous support from the central bank would transform finance into a "leading" sector. This proposition has yet to be demonstrated especially in SSA. Experience suggests that the creation of financial markets or financial institutions in the absence of demand which derives from the inherent security, return, and liquidity of the financial assets being supplied is unsustainable. Indeed, the experience of Asian countries is that financial development tends to be impeded by artificial attempts to force (i.e. "lead") the development of financial markets (Arndt 1983; Cole and Yaser 1989).

48. McKinnon (1973:5) noted that:

The economy is "fragmented" in the sense that firms and households are so isolated that they face different effective prices for land, labor, capital, and produced commodities and do not have access to the same technologies.

Related concepts were financial repression and "shallow finance" Shaw (1973:3-14). Fragmentation is a special form of dualism, for

which there is a large literature. Repression is the outcome of extreme rationing.

49. To illustrate, Nigeria has a 4-11-21 convention with respect to check clearing. Checks within cities clear within 4 days. Check between cities and other parts of the same state clear in 11 days. Finally, checks between states clear within 21 days.

50. The information required for the operation of a purely competitive market is demanding. For m buyers and n sellers to remain completely informed as the theory requires, a total of $m.n + [m(m-1)+n(n-1)]/2$ contacts have to be established and maintained. The implied information overload has been a key element in fostering specialization. Indeed, intermediation exists largely because of asymmetric information (Pyle 1971). Notwithstanding the "efficient markets" hypothesis (Fama 1970; LeRoy 1989), which purports to show that market prices contain all the information buyers and sellers find relevant, the question of both groups remain informed has not been adequately addressed. Neoclassical theory typically dealt with the issue by assuming that the necessary information materialized costlessly and automatically (Day 1976). Proponents of the rational expectations hypothesis make the same assumption. Friedman (1979); however, has demonstrated that it is beyond the capacities of any rational economic actor to acquire the information required by the rational expectations hypothesis.

51. Haverman (1970:13) noted that:

When there is market failure, collective action is necessary to correct the mis-allocation --- to get those worthwhile goods and services produced which markets fail to produce. Usually, this corrective action is government action.

The planning literature, which takes most of its inspiration from welfare economics, has a similar perspective. Indeed, few planners doubt that government action of some sort is essential to overcome the various barriers and/or constraints to development (Chakravarty 1969; Blitzer 1975; Gillis et al. 1987:Ch. 5). A different perspective is provided by Davis and Kamien (1972) and Diaz-Alejandro (1978) who argued that the promotion of efficiency requires public intervention to offset distorting factors.

52. The central bank rolls over all of the T Bills as they mature. The amount offered at any one auction is on the order of 5 to 6 times what is demanded by financial intermediaries (mainly banks and insurance companies). The central bank would ease its task in establishing a T Bill market if it were to "absorb" most of the outstanding T Bills into its own portfolio. These would be simply be rolled-over as they mature without entering the market.

53. The prospect for arbitrage exists whenever the costs of indirect financial transactions are less than the costs of making the transactions directly. Letting $c(r,t)$ represent the cost of a financial transaction between entities r and t , the condition implies:

$$c(r,t) > c(r,s) + c(s,t)$$

This basic inequality is central to any theory of rent-minimizing behavior in economics. It has appeared in many guises, e.g. transport, communication networks, storage, financial intermediation, and portfolio allocation (Hitchcock 1941; Balderston 1958; Tobin 1965; Leontief 1966:Ch.4; Pyle 1971; Calamanti 1983; and Starr 1987).

54. Starr (1987) noted that special financial institutions and secondary markets would be totally unnecessary if there were:

- no prospects of default on debt
- no transactions costs on the purchase or sale of debt instruments
- no uncertainty.

(The last two conditions are those Tobin (1965) established for the non-existence of diversified portfolios.) In developing countries, the risk of default is significant, transactions costs are high, and uncertainty is pervasive (de Rezendi Rocha 1986). That is, the basic conditions exist for the emergence of financial intermediaries and secondary markets. That both there are so few intermediaries and markets indicates that the costs of default, transactions, and uncertainty generally exceed what asset holders are willing to pay for. From this perspective, the lack of intermediaries and markets in SSA is the result of costs (relative to incomes) rather than opportunities.

55. The existence of competitive markets cannot be taken for granted. Johnson (1967:151) noted that markets are "instruments of social and economic organization." Schelling (1978:29) made the same point when he observed that:

There are a lot of requirements for making the free market work well, or even at all..... Behind a typical free market is centuries of patient development of property rights and other legal arrangements, and an extraordinary standardization of goods and services and the terminology for describing them.

Finally, in an excellent overview of the role of markets in development, Shaffer et al. (1983) argued that the "market is always an instrument of the political system" (ibid.:6, italics in original).

56. Time and facts have been unkind to the early arguments (Friedman 1953; Johnson 1969) about the degree to which a floating exchange rate permits a central bank to "insulate" domestic monetary policy from external changes. Indeed, a large proportion of the literature has been devoted to explanations of the extent to which external events will be transmitted via a floating exchange rate to the domestic economy (Fieleke 1978; Branson 1983; Dornbusch 1983; Quirk 1989). A number of the key issues involved had already been recognized as economists attempted to come to grips with the instability in the period between WWI and WWII (Keynes 1971:Ch.4; Black and Gavin 1990). An interesting twist in continuing evolution of the fixed versus floating exchange rate issue is that a key argument for the European Monetary System is that Germany's low inflation will be transmitted via a fixed exchange rate while any broader changes in competitive pressures will be transmitted through movements of the mark against the dollar and the yen.

57. The literature on confidence is largely confined to the developed countries. Most attention has been devoted to the credibility of monetary policy and the reputation of the monetary authorities (McCallum 1984; Backus and Driffill 1985; Barro 1986). Despite the simplicity of the behavior being modelled (typically a single decentralized decision maker whose well-defined utility function depends on two variables), the literature has become highly technical. The main issue, however, is the perceived consistency of the whole policy package which the monetary authorities are attempting to implement (Blackburn and Christensen 1989; Goodhart 1989:361-369; Humphage 1990). It is worth noting that the analysis focuses entirely on the credibility of the central bank's policy. The technical capacity of the central bank to implement its policy is never doubted. By contrast, the focus in developing countries is on the competence and capacity of the central bank itself.

58. This is most apparent now that many financial claims are represented by no more than electrical impulses in a computer memory.

59. While his remarks referred Eastern Europe and the Soviet Union, Corrigan (1990a:1) point that "... at the end of the day, commercial banks and central banks have only one asset that really matters, and that asset is public confidence" has general applicability.

60. The Gambia's formal adoption of an indirect monetary management system in September 1990, was accompanied by the warning from central bank officials to the commercial banks that imprudent behavior would lead to the reimposition of credit ceilings. In effect, the central bank has not lifted credit ceilings.

61. The recent resignation of the president of the Bundesbank over the monetary aspects of German reunification is a case in point. The president had severely criticized the government's position. The government's view, nonetheless, prevailed. Whether the government's position is sustained over time is not the point; the Bundesbank's "independent" view was not heeded. These events simply reinforce the point that the consequences of monetary policy are highly political (Duesenberry 1983).

62. A useful model is that of the US Fed, which Robert Roosa, former Vice-President of the New York Fed, once described as being "independent within, but not of, the government."

63. Over the longer term, there appears to be a close relationship between the economic growth of developing countries and the extent to which they maintained prudent financial policies. Data from the International Financial Yearbook, published by the IMF show that, over the last 30 years, only a limited number of countries have maintained internal and external balance over an extended period. However, those which did -- Singapore, Swaziland, Botswana, Korea, Malta, Netherlands Antilles, and Colombia -- all had impressive growth rates. The countries which have grown rapidly while running large fiscal deficits -- Malaysia, Mauritius, Pakistan, and Thailand -- have typically experienced sharp increases in their internal and external debt which proved to be disruptive. Countries such as Indonesia which have grown rapidly while maintaining a modest budget deficit have experienced several episodes of exchange rate instability. Finally, countries which failed to maintain internal or external balance (most of those in SSA and Latin America) have generally experienced slow growth and, over the last decade, retrogression.

64. Most of the experience with financial liberalization prior to stabilization have been derived from the "southern cone" countries. These countries also generated various prescriptions for the phasing of liberalization measures. The experience in Indonesia directly contradicts the southern cone experience. Indonesia opened its capital market in the early 1970s and has been selectively liberalizing its financial system as a means of promoting stability.

65. Over the decade 1974-1984, real GDP fell by 14.9% and per capita GDP fell by 44%. Inflation was 15120%; the exchange rate depreciated by 3480%; the money supply increased by 3835%; and both exports and imports declined absolutely.

66. For the decade up to mid-1986, real GDP declined by 8.6%; the money supply increased by 294%; the supply of domestic credit increased by 432%; the CPI rose by 308%; the exchange rate against the \$ declined by 216%; and foreign debt increased by 934%.

67. From 1978 to 1986, real GDP increased by 14.6% and per capita income declined by 13.6%. The money supply increased by 190%; domestic credit increased by 280% (net credit to the public sector increased by 516%); the exchange rate depreciated by 126%; and the domestic price level increased by 139%.
68. Over the period 1980 to 1985, both exports and imports (measured in US \$) declined by 49%; domestic prices increased by 136%; domestic credit increased by 268%; the money supply increased by 61%; and the exchange rate depreciated by 37%.
69. There seems to be no clear break point in the Senegalese data. Over the period 1980-1989, consumer prices increased by 24.1%; domestic credit rose by 81%; the money supply increased by 108%; the exchange rate depreciated by 32% against the SDR; exports (measured in US \$) increased by 80.4%; and imports increased by 15.4%.
70. While most governments have been concerned with liberalizing their financial systems, Hong Kong has been tightening its regulations (Ho, Lui and Cheung 1990). A series of financial panics has indicated that aspects of Hong Kong's traditionally lax system of financial regulation have become counterproductive.
71. Few government-owned banks in SSA have been supervised in any meaningful sense. The operations of most foreign-owned banks are more strictly supervised by their respective head offices in Paris, London, and Brussels, for example, than by the local authorities.
72. In The Gambia the financial reform process was supported by conditions attached to World Bank structural adjustment loan regarding legislation designed to improve parastatal performance. These changes were made but from their impact on parastatal performance so far is questionable. Malawi has also based much of its financial reform on new legislation. The fundamental problem, which few donors have grasped, is that new legislation makes little sense when the institutions which have to implement (or abide by) its provisions are dysfunctional. The literature on this issue has yet to catch up with the problems in the field. Some authors have raised the issue of considered aspects of the problem (Leonard 1983; Hyden 1983; Sandbrook 1987, 1990; and Parfitt and Riley 1989) but the topic is not well-researched.
73. In this regard, Senegal (and other members of the UMOA) are in a state of transition. It is not clear, for example, how the recent reorganization of financial regulation and inspection under the BCEAO will work out. Such activities were formerly the responsibility of inspectors attached to the ministry of finance. Now all inspection have been centralized under the direction of the BCEAO itself (World Bank 1988; UMOA 1989; Tenconi 1990). To date the main task have to organize and staff the newly-created

Commission Bancaire.

74. In The Gambia the insolvency of key financial institutions (the state-owned bank, the produce marketing board, and the cooperatives) diverted a large amount of ministry of finance, central bank, and donor time to financial rehabilitation. Had GCDB's problems been dealt with in 1982 when they first became obvious, considerable staff and donor time and perhaps as much as \$75 million could have been saved.

75. Pozdena (1991) showed that prior to the introduction of deposit insurance in the United States, banks regularly held between 12 and 15 percent of their assets as capital. Following the introduction of insurance, the ratio fell to an average of 5.5 percent. In effect, deposit insurance substituted for bank capital.

76. The Africa Investment Monitor regularly publishes "indicative prices for African debt trading." The edition of February 25th, 1991 gave the following prices of the debt in US cents per \$:

	Early January	Early February
Malawi	40-45	40-45
Nigeria:loans	34.7-35	35-36
Nigeria:pronotes	37-37.5	35.4-35.9
Senegal	30-33	30-33

No quotes were given for Ghana. This may reflect the absence of any trading or the limited amount of private lending to Ghana (World Bank 1991:Table 21).

77. In this respect, recent studies of the ability of regulators to predict potential difficulties with financial institutions have reinforced the usefulness of the CAMEL system. Thomson (1991) showed that the CAMEL index is an accurate predictor which provides a long lead time. The real weakness in the system was the disincentive for regulators to act in a timely fashion and not the deficiencies in the assessment methods being used (Neuberger 1990).

78. A more general study of bank failures in the US by Demircug-Kunt (1989) concluded that the principal causes of failure had been poor management and fraud. Seballos and Thompson (1990) identified regional issues, management, and fraud as the key factors responsible for bank failure. They noted that between 1980 and 1987, fraud was associated with 35% of all bank failures in the US.

79. In The Gambia, the movements in the parallel exchange rate were regularly monitored by central bank staff from the early part of 1983. The premium for foreign exchange at the time was around 20%. By contrast, in Senegal, there has been little done even recently to determine how the foreign exchange shortage is affecting the discount on the CFA franc. Indeed, the overvaluation

of the CFA franc is still not openly dealt with in Senegal or the UMOA (IMF 1990).

80. The conditions required by the donors often provide governments with political leverage. Numerous unpopular but necessary measures can be implemented and the blame shifted to the donors. Furthermore, by agreeing to donor conditions, the government provides some assurance to the international and domestic financial communities. Such a move enhances confidence. "Tying one's hands" is frequently used (and seen) as a signal of commitment to a particular objective (Giavazzi and Pagano 1988; Dixit and Nablehuff 1989).

81. The IMF framework includes data on:

- gross domestic product by sector
- gross domestic expenditure
- balance of payments
- monetary survey
- government revenue and expenditure
- foreign exchange budget (quarterly)
- aid flows.

Under a direct control system, the credit limits are derived from the monetary survey. For an indirect control system, an additional table which gives the source of changes in bank reserves would be added to the above list.