MONETARY AND FISCAL POLICY COORDINATION AND MACROECONOMIC STABILIZATION IN NIGERIA

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A THESIS SUBMITTED TO THE DEPARTMENT OF ECONOMICS AND STATISTICS, SCHOOL OF POSTGRADUATE STUDIES, UNIVERSITY OF BENIN, IN PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE AWARD OF THE DOCTOR OF PHILOSOPHY DEGREE IN ECONOMICS
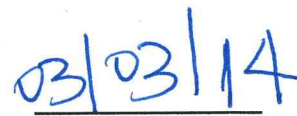
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DECLARATION

This thesis is produced by me, the under-signed, in the Department of Economics and Statistics and submitted to the School of Postgraduate Studies, University of Benin, Benin City, Nigeria, in partial fulfillment of the requirement for the degree of Doctor of Philosophy in Economics. I declare that no portion of this thesis has been previously submitted for another degree of this University or other institution of learning.

By

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Signature

Date

03/03/14

CERTIFICATION

We certify that this work, carried out by Joel Chiedu Okwuokei, in the Department of Economics and Statistics of the University of Benin, is found adequate in scope and content for the award of Doctors of Philosophy Degree in Economics and Statistics.

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DEDICATION

The work is dedicated to my mum, Ada Phoebi Okwuokei, my late Dad, Apostle Daniel Okolie Okwuokei, my wife, Charity Nkechi Okwuokei and my children, Kenechukwu, Chukwubundu, Chukwuebuka and Idikachukwu.

ACKNOWLEDGEMENT

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LIST OF ABBREVIATIONS AND ACRONYMS

AERC - African Economic Research Consortium

ACGSFR - Agricultural Credit Guarantee Scheme Fund Report

ADB - African Development Bank

ADC - Authorized Dealers Circulars

ADF - Augmented Dickey Fuller

ARSC - Annual Report and Statement of Accounts

BOC - Banking Operations Circular

BOD - Banking Operations Department

BOE - Bank of England

BOF - Budget Office of the Federation

BOP - Balance of Payment

BMSC - Bond Market Steering Committee

BPIMU - Bureau of Price Monitoring and Intelligence Unit

BPP - Bureau of Public Procurement

BSC - Banking Supervision Circular

CAGR - Cyclically Adjusted Government Revenue

CAOFB - Cyclically Adjusted Overall Fiscal Balance

CAPE - Cyclically Adjusted Public Expenditure

CBB - Central Bank of Nigeria Bullion,

CBF - Central Bank OF Nigeria Briefs

CBI - Central Bank Independence

CBN - Central Bank of Nigeria

CDS - Consolidated Debt Statement

CEMA - Customs and Excise Management Act

CMD	-	Centre for Management Development
CPC	-	CBN Policy Circular
CRF	-	Consolidated Revenue Fund
CRP	-	Commodity Reference Price
CRR	-	Cash Reserve Ratio
CSC	-	Corporate Secretariat Circular
CSOs	-	Civil Society Organizations
DF	-	Dickey Fuller
DFID	-	Department for International Development
DMO	-	Debt Management Office
DPR	-	Department of Petroleum Resources
EFR	-	Economic and Financial Reviews
EMU	-	European Monetary Union
ERF	-	Expenditure and Revenue Framework
EPZ	-	Export Processing Zone
FEAP	-	Federal Economic Advancement Programme
FEC	-	Federal Executive Committee
FGN	-	Federal Government of Nigeria
FIRS	-	Federal Inland Revenue Service
FLAC	-	Fiscal Liquidity Assessment Committee
FOD	-	Foreign Operations Department
FOMC	-	Federal Open Market Committee
FOS	-	Federal Office of Statistics
FMC	-	Financial Market Circular
FMF	-	Federal Ministry of Finance
FSP	-	Fiscal Strategy Paper

FRC	-	Fiscal Responsibility Commission
FRL	-	Fiscal Responsibility Law
FTPD	-	Fiscal Theory of Price Determination
FTPL	-	Fiscal Theory of the Price Level
GAPP	-	Generally Accepted Principles and Practices
GDP	-	Gross Domestic Product
GDPG	-	Gross Domestic Product Growth
GNP	-	Gross National Product
GR	-	Government Revenue
IEB	-	International Economic Briefs
IPO	-	Initial Public Offer
IS	-	Investment Savings
IS-LM	-	Investment Savings – Liquidity Money
IT	-	Inflation Targeting
IVs	-	Instrumental Variable Techniques
IWGSWF	-	International Working Group on Sovereign Wealth Funds
HDI	-	Human Development Index
HYER	-	Half Year Economic Report
LAG	-	Liquidity Assessment Group
LGCs	-	Local Government Councils
LM	-	Liquidity Money
LT	-	Linear Trend
MDAs	-	Ministries, Departments and Agencies
MDGs	-	Millennium Development Goals
MDD	-	Market Development Department
M2G	-	Broad Money Growth

MF	-	Macroeconomic Framework
MFPCC	-	Monetary and Fiscal Policy Coordination Committee
MPC	-	Monetary Policy Committee
MPCC	-	Monetary Policy Committee Communiqué,
MPD	-	Monetary Policy Department
MPF	-	Monetary Policy Forum
MPIC	-	Monetary Policy Implementation Committee
MPR	-	Monetary Policy Rate
MPTC	-	Monetary Policy Technical Committee
MR	-	Monthly Reports
MRR	-	Minimum Rediscount Rate
MTEF	-	Medium Term Expenditure Framework
MTFP	-	Medium Term Fiscal Framework
MTRF	-	Medium Term Revenue Framework
MTSS	-	Medium Term Sector Strategy
NASS	-	National Assembly of Nigeria
NBS	-	National Bureau of Statistics
NCS	-	Nigeria Customs Service
NDB	-	National Data Bank
NEEDS	-	National Economic Empowerment and Development Strategy
NEIC	-	National Economic Intelligent Committee
NEMT	-	National Economic Management Team
NES	-	Nigerian Economic Society
NEXIM	-	Nigerian Export-Import Bank
NFR	-	Microfinance Newsletters/Report,
NISER	-	Nigeria Institute of Social and Economic Research

NK	-	New Keynesian
NKDGE	-	New Keynesian General Equilibrium Model
NNOC	-	Nigerian National Oil Corporation
NNPC	-	Nigerian National Petroleum Corporation
NPC	-	National Planning Commission
NSE	-	Nigerian Stock Exchange
NSIA	-	Nigeria Sovereign Investment Authority
OAGF	-	Office of the Accountant General of the Federation
OCP	-	Occasional Papers
OFB	-	Overall Fiscal Balance
OFSC	-	Other Financial Institutions Circular
OILP	-	Oil Price
OLS	-	Ordinary Least Squares
OMO	-	Open Market Operation
OPS	-	Organized Private Sector
PDMM	-	Primary Dealers Market Makers
PE	-	Public Expenditure
PENCOM	-	Pension Commission
PGD	-	Policy and Guideline Documents
PhD	-	Doctor of Philosophy
PR	-	Press Release
PS	-	Permanent Secretary
QR	-	Quarterly Report
RSC	-	Reserve Management Circular
RSD	-	Research and Statistics Department
SADC	-	Southern African Development Community

SAP	-	Structural Adjustment Programme
SB	-	Statistical Bulletin
SEC	-	Securities and Exchange Commission
SMEEISR	-	Small and Medium Enterprise Equity Investment Scheme Report
SMP	-	Statistical Master Plan
SVAR	-	Structural Vector Autoregression
SWF	-	Sovereign Wealth Fund
TEC	-	Trade and Exchange Circular
TED	-	Trade and Exchange Department
TSLS	-	Two Stage Least Squares
UNDP	-	United Nations Development Programme
UNIDO	-	United Nations International Development Organization
VAR	-	Vector Autoregression
VAT	-	Value Added Tax

ABSTRACT

In Nigeria, policymakers and researchers acknowledge the importance of policy coordination between the government and the central bank in promoting economic growth and price stability. Yet, what is not understood in the literature is the extent of policy coordination, and whether the performance of the economy could be influenced by the level of coordination. Against this background, the objective of the study was to investigate the extent of monetary and fiscal policy coordination in Nigeria in the context of macroeconomic stabilization, and establish the implications for economic performance. To explore this issue, the study deployed a general framework specifying fiscal and monetary policy reaction functions to characterize the interaction between the government and the central bank. Using annual data, empirical analyses were conducted for the full sample 1980 – 2009, and for sub–periods, 1980–1999, and 2000–2009, applying the Two-Stage Least Squares estimation technique.

The major findings are as follows. First, depending on the fiscal measure adopted, fiscal policy was either pro-cyclical, or countercyclical, while monetary policy was generally pro-cyclical. Second, fiscal policy has a significant lag effect on the economy, reflecting delays in federal budgeting. Third, fiscal policy was better than monetary policy in maintaining external balance. Fourth, monetary policy response to economic imbalances, especially to inflation reflects attempt to accommodate fiscal expansion but implied a sacrifice of the price stability objective. Fifth, fiscal and monetary policies displayed inconsistent patterns, partly reflecting incoherent macroeconomic framework for policy

coordination. And finally, monetary and fiscal policy coordination lacked empirical support for the full sample and in 1980-1999, while there was ample evidence of coordination during 2000-2009 albeit with role reversal.

The results suggest that fiscal policy rather than monetary would have greater influence on output in macroeconomic stabilization in contrast with findings of previous studies. Nevertheless, monetary policy could be useful when fiscal policy fails. Overall, evidence suggests that combining both policies would produce better outcomes. The findings also highlighted the need for diversification of the economy as the best line of defense against downside risk stemming from the strong reliance on the oil sector. In light of the lag effect of fiscal policy, there is the need for measures to minimize, or possibly eliminate delays in federal budgeting. To achieve external balance, attention should focus on curtailing government spending. Furthermore, monetization of fiscal deficit should be avoided. The inconsistent pattern of policy responses calls for an integrated and coherent macroeconomic framework with the fiscal and monetary authorities working closely together to achieve the objectives of economic growth and price stability. Policy coordination is desirable and could be beneficial as it permitted both the government and the central bank to address a wider range of economic issues, which was reflected in the actual performance of output, inflation, and the balance of payment in 2000–2009.

CHAPTER ONE
INTRODUCTION

1.1   INTRODUCTION

In most economies, economic policymaking is decentralized, in the sense that there are two or more independent institutions, which exercise some degree of autonomy in decision making with respect to the management of economic affairs. In the case of Nigeria, macroeconomic policymaking is the product of a decentralized process involving the government, the fiscal authority, and Central Bank of Nigeria (CBN), the monetary authority, which both set policy instruments to achieve the overall objective of macroeconomic stabilization. A feature of this arrangement is that policy actions taken by each institution are capable of influencing key macroeconomic variables, and therefore the overall economy. As a result, there is fear that when policies are not coordinated, the economy will be pulled in different directions.

There are unsettled issues about policy coordination, which warrants further investigation. Basically, they centre on whether there are potential gains from coordination in terms of improvement in output and hence welfare. Evidence from early studies, namely, Cooper (1969), Oudiz and Sachs (1984), Turnovsky and d'Orey (1986), Turnovsky, Basar and d'Orey (1987), suggest that policy coordination is beneficial. More recently, Nordhaus (1994a) finds that an uncoordinated policy may lead to substantial loss of output that will not be offset by higher potential output growth for many years, implying that the potential gains from coordination are extremely high. In contrast, some authors are of the view that the gains are not large enough to worry about an uncoordinated policy. To Blinder (1982), greater coordination might even make things worse. Appealing to the Tinbergen-Theil instrument-target approach, Blinder argues that the policy coordination may not be important if the

authorities have more instruments that are needed to achieve the goals of stabilization policy. But unfortunately, while it is logically possible that there are more instruments than needed, the real world is characterized by a shortage of instruments in the relevant empirical sense, so that failure to coordinate fiscal and monetary policies could lead to loss of social welfare.

In Nigeria, arguments have been advanced that give indication that monetary and fiscal policies should be coordinated. Indeed, proponents of policy coordination attribute the sub-par economic performance and macroeconomic instability to unsustainable government spending, which has been largely financed by monetary growth. The discrepancy between fiscal and monetary policies has been noticeably high and is due to the lack of institutional structure, which would allow for effective consultation, cooperation and coordination between the CBN and the Federal Ministry of Finance (Okigbo Panel Report, 1994). It is further noted that both institutions have been involved in some form of cooperation in the course of policy making, mainly by engaging in pre-budget consultations. But, in reality fiscal and monetary policies have been drawn and implemented independently until probably very recently following changes in institutional and governance structures, particularly of the CBN.

Empirical studies on monetary and fiscal policies issues in Nigeria, too, acknowledge the need for policy coordination in the context of the overall management of the economy (Olaloye and Ikhide, 1995; Asogu, 1998; and Ajisafe and Folorunso, 2002). However, available works in this front tend to concentrate on the relative effectiveness of fiscal and monetary policies on economic stabilization. In this connection, Asogu (1998), and Ajisafe and Folorunso (2002), find that fiscal policy actions appeared to be more distortionary, further suggesting the need for complementarities between monetary and fiscal policies. Yet, empirical research on the theme of the study are lacking to the author's knowledge. Hence, it is not clear

how much of the poor performance of the Nigerian economy is attributable to the policy coordination problem.

1.2   STATEMENT OF PROBLEM

In pursuit of the objectives of macroeconomic stabilization, the policy stance of the government and the CBN are driven mainly by prevailing conditions in both the domestic and the international economy. Probably more than any other development, government fiscal behaviour, however, has tended to influence the direction of monetary policy in Nigeria. To be more specific, a serious challenge to monetary management in Nigeria, as very well documented by the CBN, among others, is government's disposition toward incurring fiscal deficits. A few examples may give some insight into this widely expressed concern.

As noted in the year 1999 annual report of the CBN, while the fiscal operations of the federal government resulted in substantial fiscal deficit and output growth remained sluggish, the monetary financing of the huge fiscal deficit early in the year exerted expansionary effect on monetary aggregates. Consequently, it tightened the stance of monetary policy. Remarking on the poor performance of the economy, particularly the unstable macroeconomic environment in which the CBN had operated, Sanusi (2000) admitted that the major factor that underlie the adverse movements in macroeconomic variables had been the rapid growth in government spending characterized by large fiscal deficits. To the then CBN Governor, the monetary expansion associated with deficit financing was manifested in the acceleration of inflation, persistence of exchange rate depreciation and rapid deterioration of balance of payment position. Also, in year 2001, the CBN noted that monetary aggregates were overshot because the assumptions on which they were predicated did not materialize. In particular, the size of the budget deficit was far higher than the level agreed by the monetary and fiscal

authorities. Finally, Paul Ogwuma, Governor of the CBN from 1993–1999, in CBN (2009a), summarizes the following constraints faced by the CBN:

- the mandatory financing of huge fiscal deficits of the government, which has made monetary control, price, exchange rate and interest rates stability difficult to achieve;

- the prevalence of policy inconsistency and instability, which made monetary policy outcomes to diverge from targets;

- the lapses in policy co-ordination and implementation that impacted negatively on the productive sectors; and

- the pervasive intervention by governments in the financial sector, which often sent conflicting signals to the public, especially when there was no coordination arrangement to guide the actions of the regulatory authorities;

Table 1.1 illustrates some of the outcomes of macroeconomic management, from 1992 to 1994. Specifically, the table indicates the targets and outcomes of money supply[1], Gross Domestic Product (GDP), credit to the government, and inflation. It shows that outcomes of money supply, inflation and credit to government diverged from their respective targets. However, apart from 1994, GDP growth outcomes were not very far from their targets for 1992 and 1994.

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[1] For policy purposes, the Central Bank of Nigeria classifies money supply into two – narrow money (M1) and broad money (M2). Narrow money includes currency in circulation with the non-bank public and demand deposits at deposit money banks. Broad money includes narrow money and savings and time deposits at the deposit money banks.

Table 1.1: Key Policy Targets and Outcomes, 1992–1994

	Targets (%)			Outcomes (%)		
	1992	1993	1994	1992	1993	1994
Narrow Money Supply growth	24.3	20.0	21.4	52.8	57.5	45.9
Broad Money Supply growth	26.8	18.0	14.8	49.2	54.0	36.3
GDP growth	4.5	3.5	4.0	3.0	2.3	1.3
Growth in credit to the Govt.	7.7	14.5	0.0	123.9	120.7	27.7
Inflation Rate	5.0	25.0	n.a	44.6	57.2	57.0

Source: CBN Annual Report and Statement of Accounts, 1992–1995

Good enough, the government is aware that its fiscal operations had caused the CBN all sorts of problems. For example, in the 1993 budget speech, the President of the Federal Republic of Nigeria noted that, lack of fiscal discipline was the bane of the Nigerian economy. He rightly observed that even when realized revenue was above budgetary estimates, extra-budgetary expenditure is the usual practice. Indeed, the government acknowledged that rapid growth in domestic liquidity arising from deficit financing has had adverse consequences on prices, interest rates and the exchanges rate (Shonekan, 1993). Of note, however, is the nature of coordination of monetary policy and fiscal policy targets, which according to Odozi (1992), has been within the framework of inter-agency meetings, involving government key Ministries and relevant departments of the CBN. It was in such pre-budget meetings that fiscal and monetary policies targets are harmonized. But, to him, while this policy coordination mechanism may have worked reasonably well during the policy articulation stage, it appeared to have been less successful at the implementation stage. This may be part of the reason why monetary policy targets have typically failed to be achieved for so long in Nigeria (Oyejide, 2003).

However, two things happened not too long ago that give indication that the relationship between the government and the CBN, and hence, policy coordination has

improved. The first, which was very fundamental, is the granting of operational autonomy to the CBN in 1991 and further strengthening in 1998, thus, limiting the amount of advances that it should extend to the government. The second was the creation of the Debt Management Office in year 2000, which effectively took over the responsibility of debt management. Since then, the CBN was no longer obliged to finance government deficit, at least, as was being done in the past. Incidentally, some macroeconomic variables have begun to show some signs of improvement in recent years, suggesting that the enhanced monetary and fiscal policies interaction is probably yielding a salutary effect on the economy. Similar to Table 1.1, Table 1.2 illustrates the targets and outcomes of money supply, GDP, aggregate credit to economy, and inflation rate, for 2005–2007. As indicated, inflation was well contained over the period as the outcomes exceeded targets, while GDP growth also performed well compared with the targets. Although actual money supply growth as reflected in narrow and base money were yet to meet expectations, they were not too far from targets as observed in Table 1.1. Government fiscal expansion is still a threat, but has been minimized.

Table 1.2: Key Policy Targets and Outcomes, 2005–2007

	Targets (%)			Outcomes (%)		
	2005	2006	2007	2005	2006	2007
Broad Money Supply growth[2]	15.0	27.0	24.1	24.4	43.1	44.2
Base Money growth	6.5	7.5	3.3	4.2	27.8	22.6
GDP growth	5.0	7.0	10.0	6.5	6.0	6.5
Growth in aggregate bank credit	22.5	-72.3	-29.9	17.3	-69.39	276.4
Inflation Rate	10.0	9.0	9.0	11.6	8.5	6.6

Source: CBN Annual Report and Statement of Accounts, 2009

[2] Also called high-powered money or reserve money, base money includes currency in circulation and total bank reserves.

1.3   OBJECTIVES OF THE STUDY

In broad terms, the objective of this study is to investigate the extent of monetary and fiscal policy coordination in Nigeria. Specifically, however, it seeks to achieve the following:

i.   Determine whether monetary and fiscal policies respond to the state of the economy;

ii. Determine whether monetary and fiscal policies respond to each other;

iii. Establish whether coordinated and uncoordinated monetary and fiscal policies influence macroeconomic performance; and

iv. Make appropriate policy recommendations

1.4   JUSTIFICATION FOR THE INVESTIGATION

This study is important and would be relevant in several respects. First, it is widely noted that the performance of the Nigerian economy over the years has been unsatisfactory in terms of achieving the broad objectives of macroeconomic policy. The contention is that the conduct of stabilization policy has been done by two relatively independent authorities under conditions of policy conflict. In particular, the government maintained a domineering posture, while the CBN played a more accommodating role. The immediate consequence of government expansionary fiscal bent has been the uncontrolled build up of debt. The CBN, on its part, seemed helpless to tame government fiscal excesses, thus, there have been suggestions that policy coordination between both policymakers could have improved macroeconomic performance. As empirical works on the policy coordination problem is lacking in Nigeria, this study would contribute to the understanding of the nature of the relationship between the two policymakers, and hence of policy coordination.

Second, the Nigerian experience suggests that the absence of policy coordination could be harmful to the economy when there is evidence of fiscal dominance. More so, the success of policy coordination has been linked to the extent of development of the domestic capital market. In the presence of a well developed capital market, Laurens and De la Piedra (1998) observe that policy coordination could limit fiscal deficits to a level that can be financed through the market, without having recourse to direct monetary financing without excessive external borrowing. In this respect, the capital market would enhance the effectiveness of monetary policy through the use of market-based policy instruments. In the light of this, the study would identify the likely constraints to policy coordination in Nigeria.

Finally, in 2007, the CBN announced that it would switch from indirect inflation targeting (IT) also known as "money supply targeting" to a more explicit IT framework of monetary policy effective from year 2009. Although the CBN has played down on this proposed policy shift in recent times, the argument to adopt IT is that it makes for better coordination between monetary policy and other economic policy objectives, especially where the targets are consistent (Olofin, 2008). This study would reveal whether fiscal policy would be complementary to monetary policy as required for a successful IT regime.

1.5   STATEMENT OF HYPOTHESES

Accordingly, the following hypotheses are tested:

1. Monetary and fiscal policies do not systematically respond to the state of the Nigeria economy;

2. Monetary and fiscal policies are not jointly determined and coordinated in Nigeria; and

3. Policy coordination in Nigeria improves macroeconomic performance.

1.6   **SCOPE OF THE ANALYSES**

An important point concerning the scope of the study, which probably needs to be clarified at the outset, centres on the issue of fiscal federalism. Under Nigeria's federal arrangement, there is fiscal decentralization, which implies that lower tiers of government (States and Local) enjoy some autonomy in their respective spheres of fiscal operations. This decentralized fiscal autonomy constitutes an additional threat to monetary management. Hence, it is often argued that the three tiers of government − federal, states and local − need to coordinate their activities as well, to ensure consistency with monetary objectives. Policy coordination in this wider context is important and desirable, but it is complicated and outside the scope of the present study.

For the purpose of empirical analyses, the study covers the period 1980 − 2009. The choice of the sample period is motivated by background analyses, which suggests that macroeconomic stabilization in Nigeria commenced in the early 80s in response to the need to address unfavorable macroeconomic conditions, including unsatisfactory growth, occasioned by rapid decline of crude oil prices. To achieve the objectives of the study, the sample period is further subdivided into two, 1980 −1999 and 2000–2009. The relationship between the two institutions under study seems to be more of non-cooperation, essentially the stackelberg-type, during 1980–1999. From year 2000, there were changes in the institutional arrangements in Nigeria accompanied with other reforms, which appeared to improve the relationship between the two institutions. Thus, the second period can be characterized as one of cooperation at least in relative terms. In sum, empirical analysis is done for three periods: 1980–2009, 1980–1999 and 2000–2009. The study used the following variables: Gross Domestic Product (GDP), broad money, inflation, balance of payment, oil price, public expenditure, and the overall fiscal balance.

1.7 ORGANIZATION OF THE RESEARCH

The study is divided into Six Chapters. Following this introduction, is Chapter Two, which offers perspectives on monetary and fiscal policies making, coordination and related issues, using Nigeria as a reference case. Specifically, it discusses a host of background issues, covering the meaning, rationale and importance of policy coordination, the basic elements of effective policy coordination, institutional framework for macroeconomic policy making, Nigeria's fiscal responsibility law and public expenditure management, objectives of fiscal and monetary policies in Nigeria, monetary policy process and coordination with fiscal policy, the fiscal policy process, central bank independence and central bank communication, among others. Chapter Three, which reviews related literature, is in three parts: theoretical, empirical and methodological literature. For ease of reading, the empirical review is organized on the basis of central themes in the policy coordination and related literature. Chapter Four presents the theoretical framework, methodology and data issues. In particular, the methodology segment considers the estimation technique and the variables used, including the appropriate adjustments performed. Chapter Five discusses and interprets in detail the empirical results, while Chapter Six summarizes the findings, and provides policy recommendations and concluding remarks.

1.8 LIMITATIONS OF THE EMPIRICAL INVESTIGATION

A limitation of the study is the data used for empirical analysis. They are not primary products of research, but secondary data obtained from other sources. Thus, the results depended on the data quality. High frequency data would have been preferred for the study given that the sample period was divided into two sub–periods. Unfortunately, apart from the GDP series, which is available on quarterly basis, high frequency data is generally lacking

forcing the use of annual data. In addition, data publication comes with about a two–year lag, which limited the scope of empirical analysis to 2009.

The study adopted a reaction function approach, which specifies reaction functions of both the fiscal and monetary authorities that permit the analyses of the joint interaction of both policies in response to the state of the economy. A limitation of this approach is that reaction functions may not reveal why there is lack of policy response. They may only tell whether fiscal and monetary policies have jointly responded to an economic situation in a systematic manner or not. In the context of policy coordination, this approach may also only reveal whether both policies have responded to each other systematically or not. Nevertheless, this approach was used because it is relatively simple and useful in achieving the objectives of the study.

Another issue was the absence of previous published work in Nigeria on the theme of the study on which to build from and identify where gaps exist. The study relied mainly on studies carried out elsewhere, especially in the more advanced countries.

Timing was another challenge. The PhD Programme is structured in a manner that candidates have limited time to delve into many issues that may warrant attention.

CHAPTER TWO

BACKGROUND TO THE STUDY

2.1 **INTRODUCTION**

This Chapter presents background information relating to the theme of this study, especially as they affect policymaking in Nigeria. In this process, it examines the nature of policymaking and hence the extent of coordination between the fiscal and monetary authorities during the period covered by the study. It commences by introducing the concept of monetary and fiscal policy coordination and its basic elements. Subsequently, discussions centre on a wide range of issues, covering the institutional framework for macroeconomic policymaking, the fiscal responsibility law and public sector expenditure management, objectives and instruments of macroeconomic policy, Nigeria's historical macroeconomic stabilization efforts, central bank independence, transparency and communication and implications for monetary policy, among others.

2.2 **MEANING, RATIONALE AND SIGNIFICANCE OF MONETARY AND FISCAL POLICY COORDINATION**

In a more general sense, fiscal and monetary policy coordination means any of the following four states (Lambertini and Rovelli, 2003): (a) exchange of information between policymakers; (b) mutual acknowledgement of the existence and the likely behavior of policymakers; (c) joint-decision making between policymakers (full cooperation or collusion); and (d) agreement on a sequence of steps by two policymakers. In specific terms, however, coordination may involve the interaction between the monetary authority and the fiscal authority in the financing of budget deficit and the consequences for monetary management (Hanif and Arby, 2003). Policy coordination also includes interaction in setting of fiscal targets to ensure consistency with monetary targets. Togo (2007) defines policy coordination as some

form of decision-making process that determines a consistent policy mix that would result in the type of society that citizens want their elected government to pursue. To this author, coordination may take the form of a policy rule, haggling and negotiation.

The basic rationale for monetary and fiscal policy coordination as aptly summarized by Hanif and Arby (2003), includes the following: (1) to set internally and mutually agreed targets of monetary and fiscal policies with a view to achieving non-inflationary growth; (2) to facilitate effective implementation of policy decisions to achieve the set targets of monetary and fiscal policy efficiently through mutually supportive information sharing and purposeful discussion; (3) to compel both the government and central bank to adopt a sustainable policy. Policy coordination also ensures that policymakers are committed to the mutually agreed objectives, thus eliminating the time inconsistency problem (Laurens and De la Piedra (1998). Indeed, Laurens and De la Piedra argue that without policy coordination, financial instability could ensue, leading to high interest rates, exchange rate pressures, and rapid inflation with adverse impact on growth.

Yet, in reality, policy coordination in the context of economic management is somewhat difficult to achieve due to a variety of reasons. Blinder (1982) identifies three reasons, namely, (a) both authorities might have different objectives, that is, different perception of what is good for the society; (b) both might have different opinions about the likely effects of fiscal and/ or monetary policy actions on the economy; and (c) the two might have different forecasts of the likely state of the economy in the absence of policy intervention. Similarly, Pindyck (1975) points to differences in set of objectives, differences in econometric models used, and differences in the information available to both authorities as possible causes of the occasional lack of coordination of monetary and fiscal policies. However, even if there is no

conflict in objectives, absence of coordination could arise from uncertainty about what the other is doing (Buiter and Sibert, 2002). This is in two dimensions: uncertainty about how each policymaker views the exogenous environment in which both operate and uncertainty about how both may respond to each other's actions.

2.3   ELEMENTS OF EFFECTIVE MONETARY AND FISCAL POLICY COORDINATION

To ensure that monetary and fiscal policies are effectively coordinated, certain critical elements are desirable and should in fact exist. Among others, they include the institutional design for macroeconomic policy, central bank independence, limitation on direct central bank lending to the government, fiscal discipline, a well developed capital market and a public debt management strategy. These elements although related, are important in their own rights. Some of them are further discussed in this Chapter. However, it may be important to make the following points to highlight their inter-linkages:

✓   Direct lending to the government is bound to occur when the capital market is underdeveloped. As a matter of fact, it becomes the main source of financing government fiscal deficits. Experiences from developing countries, Nigeria included, attests to this phenomenon. It is evident when there is no central bank independence;

✓   Fiscal indiscipline occurs because of discretionary fiscal policymaking. Indeed, use of discretion could be misguided consequently leading to fiscal deficit, rising debt level and general loss of policy credibility;

✓   Thus, to ensure fiscal discipline, the following are often suggested:

- fiscal policy rules and the political commitment to observe them,

- sound budgetary institutions;

- political consensus on prudent fiscal policy; and

- budget execution, transparency and monitoring

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✓ A developed domestic financial market provides a ready source of non-inflationary and the least distortionary financing of fiscal deficit;

✓ In countries with developed capital markets, feasible institutional arrangements for coordination include separation of objectives, functions and instruments of monetary and fiscal policies (Worrell, 2000). The financial markets in general ensure that policies are coordinated through appropriate changes in interest rates, exchange rates and future prices and the responses they elicit from policymakers;

✓ Although financial markets provide effective mechanisms for ensuring consistency between monetary and fiscal policies, it is further noted that such policy coordination is not without difficulties and sometimes results in financial instability;

✓ However, in underdeveloped markets, the market mechanism is missing. In which case, the separation of functions and objectives may not guarantee the desired macroeconomic outcomes;

✓ The central bank and the treasury should therefore coordinate their objectives and agree on the size of fiscal deficits and how it should be financed (Laurens and De la Paedra, 1998).

✓ The degree of separation of economic powers, and hence the extent of central bank independence differs from country to country. Nordhaus (1994a) cites three apparently contrasting examples: the German Bundesbank, which is fiercely independent; the US Federal Reserve, although independent from the executive, it performs a ritual obeisance to the legislature; and the Bank of Japan, which is accountable to the Ministry of Finance;

✓ Coordination of the volume of debt issuance in the primary market within the monetary policy goals is also important as it often helps to resolve conflicts concerning monetary policy stance. A public debt management strategy very well serves this purpose.

✓ The objectives of debt policy are to ensure that financing of government needs and its payment obligations are met at the lowest possible cost consistent with a prudent degree of risk;

✓ But, on its part, public debt management affects the interest rates and have implications for the credibility of the overall policy mix, particularly when public debt reaches unsustainable levels; and

✓ Poor fiscal management and high levels of debt can threaten monetary policy objectives as they increase inflationary expectations and cause real interest rates to rise and the currency to depreciate (Togo, 2007)

2.4 INSTITUTIONAL FRAMEWORK FOR MACROECONOMIC POLICYMAKING IN NIGERIA

The institutional design for both fiscal and monetary policy is an important aspect of policy coordination, and hence can improve or deteriorate macroeconomic performance. For example, Donnel and Bhudia (2001) observe that the design of the UK institutional framework is such that policy coordination is enhanced, while providing the right incentive for the conduct of both monetary and fiscal policies. According to the authors, the design of the appropriate macroeconomic framework should feature three principles, namely, credibility, flexibility and democratic legitimacy. By a credible framework, is meant working within clearly defined long-term policy objectives, maximum openness and transparency. It also implies very clear and accountable divisions of authority. On the other hand, transparency guarantees that both the government and the central bank are better able to anticipate each other's policy decisions. Also, the framework should be designed in such a manner as to allow policymakers the flexibility to react sensibly to unexpected economic disturbances. Assessing the UK experience, Donnel and Bhudia contend that full discretion or a policy rule may not be helpful, suggesting

an alternative in the form of constrained discretion, which would give policymakers' room to respond to shocks. In so doing, it helps enhance credibility further.

In Nigeria, the institutional design for the conduct of fiscal and monetary policy centres on the government and the CBN. Typically, just as it is found in other countries, the government is responsible for fiscal policymaking. However, the Federal Ministry of Finance (FMF) being the apex fiscal authority, is the government institution that actually performs this function, although there are other institutions that are involved and come under the supervision of the Ministry. Fiscal institutions can be classified into Revenue Collecting, Public Expenditure Management and Economic Management. On the other hand, monetary policymaking is the sole responsibility of the CBN. Currently, it is the Monetary Policy Committee (MPC) within the Bank that performs the monetary policy function.

2.4.1 The Institutional Framework for Fiscal Policy

Central to the conduct of fiscal policy in Nigeria is the Federal Ministry of Finance, which is headed by an Honourable Minister, a member of the Federal Executive Council (FEC). The Minister is appointed by the President of the Federal Republic of Nigeria, subject to confirmation by the National Assembly. This Ministry is charged with the responsibility of managing the finances of government and reports to the FEC. To do this, it formulates and implements government fiscal policies, making appropriate adjustments and changes in taxation, revenue and expenditure to promote Nigeria's economic objectives. Also, it harmonizes its activities with those of the CBN to minimize conflicts in order to ensure the achievement of macroeconomic goals of the government (CBN, 2009). As part of fiscal policy formulation and implementation, the Ministry carries out functions covering:

- budget formulation, preparation, defense, implementation, monitoring and evaluation;

- management of Nigeria's economic relations;

- processing applications for public institutions for foreign exchange;

- processing tariff matters; and

- monitoring projects financed by bilateral and multilateral institutions

2.4.1.1 *Public Expenditure Management Institutions*

A very important institution in the fiscal policy framework is the Budget Office of the Federation (BOF), which of course is part of the Federal Ministry of Finance, although headed by a Director-General. This Office essentially performs budgetary functions for the government. It is also involved in fiscal policy issues.

To centrally coordinate the management of Nigeria's debt, the Debt Management Office (DMO) was established in October, 2000. Before then, debt management in Nigeria was very problematic, in the sense that there were many departments involved with debt issues, both at the FMF and the CBN. According to the DMO (2010), the proliferation of the debt management Offices led to: (a) operational inefficiency and poor coordination; (2) inadequate debt data, record system and poor information flow across agencies; (3) complicated and inefficient debt service arrangements, leading to penalties that added to the already burdensome debt; and (4) extreme difficulties in the verification of creditors claims due to conflicting figures emanating from different Offices.

The DMO Act, 2003, Section 6(1), Part Three, specifies the functions of the DMO, among which are: the maintenance of a reliable database of all loans taken or guaranteed by the Federal or State Governments or any other agencies; and the preparation and

implementation of a plan for the efficient management of Nigeria's external and domestic debt obligations at sustainable levels compatible with desired economic activities for growth and development, and participation in negotiations at realizing those objectives.

The Bureau of Public Procurement (BPP) came into existence following the enactment of the Public Procurement Act, 2007. According to Section 4(a)-(d), Part II, of the Act, the BPP was established with the following objectives:

- harmonize existing government policies and practices on public procurement and ensuring probity, accountability and transparency in the procurement process;
- establish pricing standards and benchmarks;
- ensure the application of fair, competitive, transparent, value-for-money standards and practices for the procurement and disposal of public assets and services; and
- attainment of transparency, competitiveness, cost effectiveness and professionalism in the public sector procurement system.

The Fiscal Responsibility Commission (FRC) was set up following the passing into law of the Fiscal Responsibility Bill in year 2007. It occupies a central position in the promotion of Nigeria's economic objectives by ensuring prudent management of its resources. Among other functions, the Office is mandated to: (a) monitor and enforce the provisions of the Act; (b) disseminate such standard practices including international good practices that will result in greater efficiency in the allocation and management of public expenditure, revenue collection, debt control and transparency in fiscal matters, and (c) undertake fiscal and financial studies, analysis and diagnosis and disseminate the result to the general public.

2.4.1.2 **Revenue Collecting Institutions**

The Nigerian National Petroleum Corporation (NNPC) plays a prominent role in Nigeria's fiscal arrangement, as it manages government's interests in the oil industry, in partnership with multinational oil companies operating in the country. The NNPC Act 1977, which dissolved the then Nigerian National Oil Corporation (NNOC), empowered the NNPC to engage in all commercial activities relating to the petroleum industry and also to enforce all regulatory measures concerning the control of the industry through its inspectorate division, the Department of Petroleum Resources (DPR).

The Customs and Excise Management Act (CEMA), CAP 45, Laws of the Federation of Nigeria vests the legal authority in the Nigeria Customs Service (NCS) to handle all customs matters on behalf of the government. In addition to its statutory function of revenue collection, it is instrumental in the implementation of government fiscal policies. Among other functions, it conducts anti-smuggling activities, generates import and export statistics for economic planning and budgeting, engages in research and enforces government's tariff policies, and collaborates with other agencies.

Another government institution charged with the responsibility of revenue collection is the Federal Inland Revenue Service (FIRS). The objective of this Office, as stipulated in Section 2, Part 1, of the FIRS Act 2007, is to control, administer and account for different taxes. The FIRS, in collaboration with the relevant Ministries and agencies, is required to review the tax regime and promote the application of revenue to stimulate economic activities and development.

2.4.1.3 **Planning, Research, Statistics and other Economic Management Institutions/Committees**

In Nigeria, the National Planning Commission (NPC) has the responsibility to make policies on issues relating to development planning. It is headed by the Vice President of the

Federation Republic of Nigeria, as Chairman, while the Minister of National Planning is the Vice - Chairman. Among other functions, the NPC formulates and prepares long-and short term national development plans and coordinates such plans at the Federal, State and Local levels.

There are three government parastatals under the supervision of the NPC, namely, the Centre for Management Development (CMD), National Bureau of Statistics (NBS), and the Nigeria Institute of Social and Economic Research (NISER). These three institutions assist the NPC to fulfill its mandates. The CMD is a resource institution established in 1976 to undertake management development in Nigeria. As a capacity building institution, one of its functions is to advise the NPC on policies, plans and programmes that would enhance the number, quality and effective utilization of the manpower resources of all sectors of the economy. In Nigeria, NISER prides itself as the premier think-tank and research and consultancy agency of the Federal Government. Its chief concern is the analysis of development policy issues affecting Nigeria and the whole of the African continent.

The National Bureau of Statistics (NBS) came into force following the merger of the Federal Office of Statistics (FOS) and the National Data Bank (NDB) in 2005. Its creation was part of the implementation of the government's Statistical Master Plan (SMP), the preparation of which was funded by the World Bank in 2003. Headed by a Statistician-General, the now reformed NBS is well equipped to produce statistical data demanded by local and international users. Of note, the CBN and the NBS have been involved in many collaborative efforts to ensure that economic data are not only timely but also of high quality in line with international standard (CBN, 2009).

There is also the National Economic Management Team (NEMT), which was reconstituted in August 2011, by the President. The expanded team has the President as Chairman, the Vice-President, as the Vice Chairman, while the Minister of Finance is the team coordinator. Among others, the members include Minister of National Planning, Minister of State for Finance, Minister of Petroleum Resources, Minister of Agriculture, Minister of Works, Minister of Trade and Investment, Central Bank Governor, Minister of Transport, representative of the Office of the Vice President, Permanent Secretary Ministry of Finance, the Chief Economic Adviser and Director-General, Budget Office of the Federation, and private sector experts. The new mandates of the team include job creation, improved power supply and infrastructural development. Other areas of focus are agriculture, security, and a special emphasis on the manufacturing sector. The team has a four-year period to address these mandates, which are the integral part of Nigeria Vision 20:2020 with the broad aim of making Nigeria among the top 20 economies in the world.

2.4.1.4 **The National Assembly of Nigeria**

The National Assembly (NASS) being Nigeria's apex lawmaking body is very relevant as far a fiscal policymaking is concerned. It is composed of two chambers or Houses, the Senate and the House of Representatives, with a total of 469 members (109 Senators and 360 House members). The 109 members of the Senate are made up of 3 Senators from each Senatorial District of the 36 States of the Federation and 1 from the Federal Capital Territory, while the 360 members of the House of Representatives represent Federal Constituencies of nearly equal population. NASS has a term of 4 years, which takes effect from the date of its first sitting after the general election. The current 7th Assembly was inaugurated on th June 2011.

The power of Nigeria's highest legislative body to influence government fiscal policy derives from relevant sections of the 1999 Constitution of Federal Republic of Nigeria. Specifically, they relate to the lawmaking and oversight functions of the legislature. For example, Section 80 of the Constitution grants NASS the power and control over public funds. This Section establishes the Consolidated Revenue Fund (CRF) into which all revenue or moneys received by the Federation are   paid. It further stipulates that, no moneys shall be drawn from this Fund except to meet expenditure as prescribed by the Constitution or as authorized by an Appropriation Act, Supplementary Appropriation Act or as prescribed by NASS. Moreso, no money shall be withdrawn from any public fund other that the CRF, except as NASS decides.

It is typically the constitutional responsibility of the President to prepare and submit to NASS for consideration the estimates of revenue and expenditure in the form of a bill for the next financial year. If the money appropriated later becomes insufficient and there is need for further expenditure, particularly arising from unforeseen emergencies, the Constitution further provides for a supplementary bill, which must also be subjected to the same process as the main bill. The annual budget process is indeed an opportunity for NASS to make its presence felt, and hence influence the direction of fiscal policy, as all Ministries, Departments and Agencies (MDAs) of government are required to appear before the appropriate NASS Committees for budget hearing and defence.

Also, the legislative power of NASS is exercised by bills passed by both Houses, of course subject to assent by the President. Related to this, is Section 59, which concerns the mode of exercising legislative power in the context of money bills. As indicated in the section, money bills come in two forms: (a) appropriation bill or a supplementary bill,

including any other bill that involves withdrawal from the CRF or any other public fund of the Federation, and (b) any bill for the imposition, increase, reduction or cancellation of any tax, duty or fee. The implication of this section is that any issue involving raising or spending money by the government must be presented to NASS in the form of a bill, which requires legislative approval.

Fig 2.1:   The Institutional Framework for Fiscal Policy in Nigeria

2.4.2   **The Institutional Framework for Monetary Policy**

Until 2007, the CBN through the Board of Directors was responsible for the formulation and implementation of monetary policies in Nigeria, as evident in the CBN Act of 1991. The Board consisted of eleven members, namely, the Governor, who was the Chairman, four Deputy Governors, the Permanent Secretary of the Federal Ministry of Finance, and five Directors. But, from 2007, the Board was no longer responsible for monetary policy as reflected in the new Central Bank of Nigeria Act. The Monetary Policy Committee within the Bank has taken over this important function.

2.4.2.1   *The Monetary Policy Committee of the Central Bank of Nigeria*

In recent times, monetary policymaking has evolved into the use of the committee system. The trend became more noticeable when two of the most influential Central Banks, the Bank of England (BOE) and the Bank of Japan, switched to this form of decision making in the second half of the 1990s (Vandenbussche, 2006). Generally, the thinking is that two heads are better than one because committees enjoy the benefit of information aggregation of its members. However, whether a committee makes better and quicker decisions than a single individual, and hence is more useful for monetary policy making, is a subject of debate. Experimental studies suggest that committee-based decisions are better and took no longer than individual decisions (Blinder and Morgan, 2005, 2008; Lombardelli, Proudman and Talbot, 2005). Also, under conditions of uncertainty, a Committee does better in policymaking (Gerlarch-Kristen, 2005).

An issue of concern in the literature is the optimal size of the Monetary Policy Committee (MPC). To address this issue, Berger and Nitsch (2008), analyze the relationship between the number of MPC and monetary policy outcomes using data

covering more than 30 countries from 1960-2000. Findings suggest that the lowest level of inflation are obtained by MPCs with about 7-10 members. The ideal size is probably not more than 5 members (Siebert, 2006). Further on this, Blinder and Morgan (2007) find that an 8-person group implements monetary policy tasks better than a 4-person group. Kang (2004) examines how the optimal size of committees is determined under the assumption that individuals can fully communicate their opinions to other members of the committee. The study finds that if monetary policy involves a large number of decisions, the optimal size is small. Further results suggest that the greater the cost of time delay and less diverse the information, the smaller the optimal size.

Attempts have been made to characterize the type of committee system observed in practice. In this connection, Blinder and Wyplosz (2004) identify four archetypical systems: individualist committees, autocratically–collegial committees, genuinely collegial committees, and the genuinely individualistic committees. A foremost example of the individualistic system is that of New Zealand in which the Governor of the Reserve Bank is solely responsible for taking monetary policy decisions. This is an unusual arrangement internationally, and may work well when the Governor has exceptional qualities (Svensson, 2001). The Alan Greenspan leadership of the Federal Open Market Committee (FOMC) is often described as the autocratically-collegial type. In this system, the Chairman of the MPC is a virtual monetary policy dictator (Spencer, 2005). The interest rate decision is effectively the Chairman's choice. Thus, being a dominant figure in the meeting, the Chairman speaks first and expects every other member to accept his opinion. In contrast, in the genuinely collegial system, the decisions are consensus driven. Examining the observed characteristics of the MPC of the CBN, it seems qualified as a genuinely collegial system given that each individual member is permitted to speak freely

on any issue of concern at the meeting. Indeed, the minutes of the MPC meeting of March 21-22, 2011, for example, included the personal statements made by members. Also, the decisions are reached by simple majority voting.

The structure of the MPC in terms of its composition is a very critical aspect of the entire monetary policy framework. Indeed, a poorly structured MPC could affect the quality of policy decisions. In designing an MPC, the current practice is to include both internal and external members. For this reason, it may be useful to distinguish between an external member (outsider) and internal member (insider). External membership or outsiders can be viewed from two different standpoints. First, it may connote a member of the MPC, who is neither an employee of the bank nor a board member, and hence, is not involved in the bank's day-to-day administration. An inclusion of this category of persons implies that the bank is open to alternative external views. Furthermore, an outsider could also mean a member, who represents the interest of the government and is involved in the management of the bank. For example, in Nigeria, the Permanent Secretary of the FMF is a non-executive board member, who is also a member of the MPC. To ensure policy coordination, most countries now have at the minimum, a representative of the Ministry of Finance as a member of the MPC. Another school of thought contends that for the MPC to be truly independent, the members must not include politicians and government representatives.. On the other hand, an insider is an employee of the bank, who of course is deeply involved in the day-to-day running of the bank. Further on MPC design issues, it is often advisable to include experts in monetary policy, macroeconomics and financial markets. The argument is that since monetary policymaking is essentially a technical exercise, which requires technical skills, non-

experts would have reduced ability for independent assessment and less capacity to participate in monetary policy discussions (Svensson, 2001).

In Nigeria, monetary policymaking has been done by a Committee of the Bank based purely on an internal decision making structure, from 1999 until 2007 during which the arrangement was institutionalized by the new CBN Act. Then, the MPC included the Governor, who was the Chairman, 4 Deputy Governors, 6 Departmental Directors, 2 external board members, 1 member representing the FMF, and a Secretary. At commencement, the management of the domestic currency was of utmost concern, thus, the Committee met virtually on a more regular basis, as can be seen in Figure 2.2, to address issues relating to the effectiveness of the foreign exchange market and also discussed monetary policy issues. In that regard, it reviewed developments in the economy and foreign exchange market, assessed the risks to price stability and decided whether to adjust interest rates or not. It also agreed on things to be done to contain unfavorable price movements.

Fig 2.2 :   Number of Meetings Held by the Monetary Policy Committee, 1999 - 2008
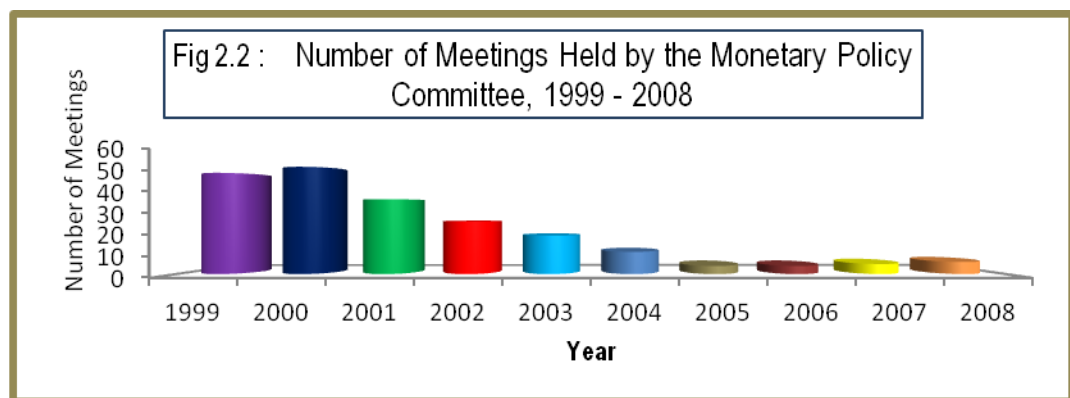
Source: Author using data from the Central Bank of Nigeria Annual Report, various years.

It is observed that the MPC deliberated on a wide range of policy issues covering the mandates of the Bank, as evident from the Communiqués issued in the earlier years of its activities. However, from 2007, the composition of the MPC changed, as specified in

Section 12 of the CBN Act of 2007, although it was not until January 2010, that the MPC was reconstituted to reflect this new structure. To be sure, the Act stipulates that in order to facilitate the attainment of the objectives of price stability and to support the economic policy of the federal government, there shall be a Committee of the Bank known as the Monetary Policy Committee (MPC). The MPC consist of 12 members as follows:

- The Governor of the Bank, who shall be the Chairman;

- The four Deputy Governors of the Bank;

- Two Members of the Board of Directors;

- Three members appointed by the President of the Federal Republic of Nigeria; and

- Two members appointed by the Governor.

Moreso, the MPC now has a clearly defined mandate. That is, it has responsibility within the Bank for formulating monetary and credit policy. However, to pursue this core mandate, the MPC essentially does four things: (a) reviews economic and financial conditions in the economy; (b) determines appropriate short-and medium policy stance of the Bank; (c) reviews on regular basis, the CBN monetary policy framework and adopt changes when necessary; and (d) communicates monetary and financial decisions to the public and ensure the credibility of the model of transmission of monetary policy.

Figure 2.3 illustrates the composition of the newly reconstituted MPC, while Table 2.1, which contains the Committee's profile, reveals that members have diverse experiences and a wide range of expertise in economics, accounting, law, banking, financial institutions and risk management. Specifically, there are three Professors of Economics and three other Doctor of Philosophy (PhD) holders, who have teaching and

research experiences and also specialize in macroeconomics, fiscal and monetary policies, econometrics, international and development economics. Many others, particularly the Governor and Deputy Governors of the Bank have spent a good number years in bank management.

Fig 2.3: Composition of the Monetary Policy Committee of the CBN
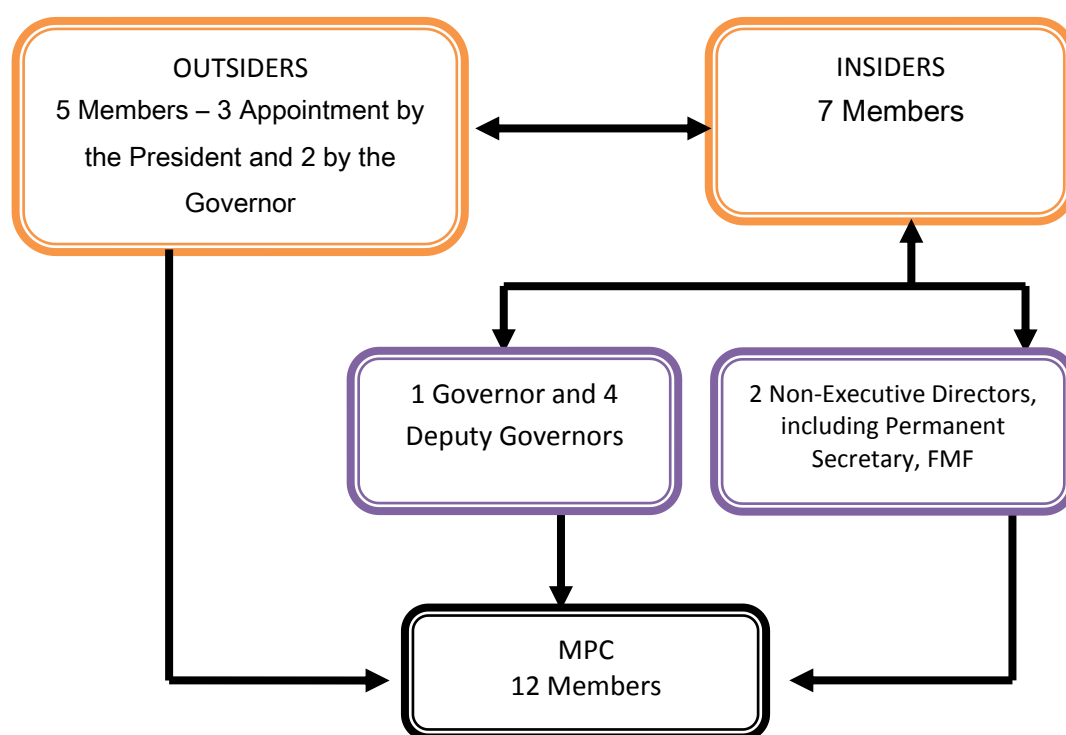
Source: Author

Table 2.1: Profile of MPC Members of the Central Bank of Nigeria, 2008.

	Name	Status	Research Interests/Areas of Specialization	Background
1	Mr. Sanusi Lamido Sanusi	Governor/Chairman/ (Internal Member)	Economics, Banking and Risk Management	Varied experience in banking rising to the position of GMD/CEO of First Bank Plc, the largest bank in the country before appointment as the 10th Governor the CBN.
2	Mr. Tunde Lemo	Deputy Governor, Operations (Internal Member)	Accounting and Banking	Wide experience in banking rising to the position of MD/CEO of Wema Bank Plc until his appointment.

3	Alhaji Suleiman Barau	Deputy Governor, Corporate Services (Internal Member)	Economics	Banking experience in treasury, investment banking, corporate finance, financial institutions.
4	Dr. (Mrs) Sarah O. Alade	Deputy Governor, Economic Policy (Internal Member)	Economics and Management Science	Oversees the Economic Directorate comprising the Research, Monetary Policy, Trade and Exchange, Statistics and Financial Markets Departments. Chairs the Monetary Policy Implementation Committee.
5	Dr. Kingsley Moghalu	Deputy Governor, Financial System Stability (Internal Member)	Law, International Relations and Risk Management	Wide experience and expertise in law, risk management, corporate governance, and development finance, etc. Had 17 year experience with the United Nations, rising to the rank of a Director.
6	Prof. Sam. O. Olofin	Non-Executive Director (Internal Member)	Economics	Lecturer in the Department of Economics, University of Ibadan and Director, Centre for Econometric and Allied Research.
7	*Mr. Danladi Kifasi	Non-Executive Director/PS, FMF (Internal Member)	Accountancy and Law	Many years of accounting experience in private and public sectors. He has worked in a number of Ministries before becoming the PS, FMF.
8	Dr. Adedoyin Salami	External Member	Macroeconomic Policy and Risk Management	Senior Lecturer, Head of Research and full time member of the Faculty of Lagos Business School, Pan African University. He is a member of the National Economic Management Team. Consultant to the Department for International Development (DFID), the World Bank, United Nations Industrial Development Organization (UNIDO), etc.
9	Mr. John Oshilaja	External Member	Public Finance and Financial Markets	Over 25 year experience in experience in emerging markets in Latin America, Eastern Europe, Middle East and Africa. Experience in public debt restructuring.
10	Pro. Chibuike U. Uche	External Member	Banking , Financial Institutions and	Full Time Lecturer in the Department of Banking and

			Markets	Finance, University of Nigeria. Fellow, Institute of Chartered Accountants of Nigeria.
11	Dr. Shehu Yahaya	External Member	Development Economics, Macroeconomics, and international Economics	Executive Director, African Development Bank (ADB). Wide experience in banking policies, project and program implementations. Had Served as an Executive Director, Nigerian Export-Import Bank (NEXIM).
12	Prof. Abdul-Ganiyu Garba	External Member	Monetary and Fiscal Policies	Lecturer in the Department of Economics, Ahmadu Bello University, Member of the AERC, Nigeria Economic Society (NES).

To support the MPC, the CBN has four additional Committees, namely, the Monetary Policy Technical Committee (MPTC), the Monetary Policy Implementation Committee (MPIC), the Fiscal Liquidity Assessment Committee (FLAC), and the Liquidity Assessment Group (LAG). The Monetary Policy Technical Committee (MPTC) meets ahead of the MPC meeting, and performs three basic functions:

- consolidates the inputs of various departments related to monetary policy;

- reviews the technical soundness of the monetary policy recommendations of the MPIC; and

- reviews international and domestic developments and their implications for the ability of the Bank to achieve the objectives of price stability

Unlike the MPTC, the Monetary Policy Implementation Committee (MPIC) meets more regularly and has three specific mandates, which includes: projecting the daily injections and withdrawal of liquidity through the bank; forecasting the daily liquidity gap; and designing the strategy and identifying the instruments for closing the gap. Meanwhile, the Fiscal Liquidity

Assessment Committee (FLAC) is basically an inter-agency Committee. It constitutes the CBN's departments that are involved in monetary policy formulation, operations and monitoring. In addition, members are also drawn from the Ministries and Offices concerned with government fiscal operations. The Committee is headed by the Director, Monetary Policy Department (MPD). The other Departments include: Banking Operations (BOD), Trade and Exchange (TED), Research and Statistics (RSD), and Foreign Operations (FOD). On the government side, members include: the Federal Ministry of Finance, the Budget Office of the Federation (BOF), Nigeria Customs Service (NCS), the Federal Inland Revenue Service (FIRS), the Nigerian National Petroleum Corporation (NNPC), and the Office of the Accountant General of the Federation (OAGF). This Committee designs and regularly updates the framework for obtaining information for the purpose of liquidity forecasting. Specifically, it performs the following functions:

- daily collection and update of liquidity data arising from government fiscal operations, and forwards forecasts to the LAG;
- collates all available information on projected revenue and expenditure for the near future; and
- undertake daily and monthly forecasting to determine the net fiscal injection and withdrawal of liquidity to the financial system;

Finally, the Liquidity Assessment Group, which is led by the Director, BOD, includes other departments, namely, TED, MPD, RSD, and FOD. It is the responsibility of the Committee to take key decisions on intervention in the domestic money and foreign exchange markets. The Committee also determines the form of intervention required to achieve optimum system liquidity. In specific terms, its functions cover the following:

- determination of the timing and need for intervention ;

- determination of the size, type, and tenor of instruments;

- communication of its decision to the Chairman of the MPIC;

- build database on its expectations on daily, weekly and yearly basis, to aid forecasts; and

- follow-up the implementation of policy measures and report to the MPIC.

Fig 2.4: The Institutional Framework for Monetary Policy in Nigeria, 2008.
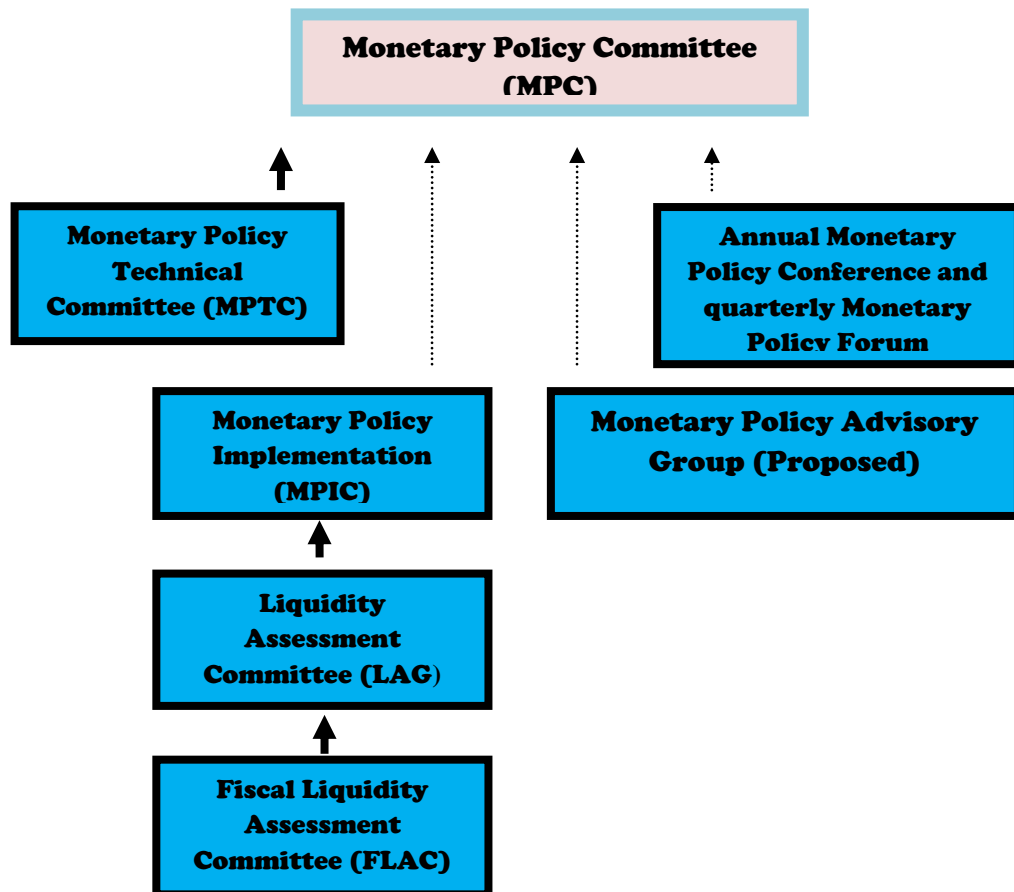
Source: Adapted from CBN (2009), 50 Years of Central Banking in Nigeria.

2.5 THE FISCAL RESPONSIBILITY LAW AND PUBLIC SECTOR EXPENDITURE MANAGEMENT IN NIGERIA

There is no doubt that Nigeria's resources, particularly oil revenue, have been mismanaged over the years. For a long time in the course of its history, the country was characterized by waste and recklessness in government spending.   The

consequences on macroeconomic stability and the CBN's ability to conduct monetary management are well documented. However, things took a turn for good in year 2007 following the passing into law of landmark legislation, the Fiscal Responsibility Law (FRL), which provides for prudent management of the country's resources. This Act seeks to ensure long-term macroeconomic stability, secure greater accountability and transparency in fiscal operations of government within a Medium Term Fiscal Policy Framework (MTFP). According to Adam and Goderis (2006), this Law laid the foundations for improved fiscal management of oil revenues and prospect now exists for a genuinely independent central banking in Nigeria. Since 2007, government has made genuine progress in this regard. Its fiscal operations and the management of finances generally have been done within the requirements of the law. To some measure, government affairs relating to its finances are now being conducted in a more transparent manner, especially disbursements from the Federation Account (FA) to the three tiers of government.

Part II of the Law requires the Federal Government after consultation with the States of the Federation, at most 6 months after its commencement to prepare and present to the National Assembly, for consideration a Medium Term Expenditure Framework (MTEF) for the next three years. Then, subsequent MTEFs should be prepared at most 4 months before the commencement of a new fiscal year. The MTEF is very unique in that it contains the following five components:

✓ A Macroeconomic Framework (MF), which sets out the macroeconomic projections for the next three financial years. It also includes an evaluation and analysis of similar projections for the preceding three years;

- ✓ A Fiscal Strategy Paper (FSP). This document is divided into four parts: (a) an outline of the Federal Government's medium term financial objectives; (b) its policies for the medium term relating to taxation, capital expenditure, borrowings and other financial liabilities, lending, and investment; (c) the strategic economic, social and developmental priorities and fiscal measures for the next three years; and (d) an explanation of the financial objectives, strategic economic, social and development priorities and government's fiscal measures;

- ✓ An Expenditure and Revenue Framework (ERF) setting out: (1) estimates of aggregate revenues for the federation for each financial year, based on the predetermined Commodity Reference Price (CRP) adopted and tax revenue projections; (2) aggregate expenditure projections for the federation for each financial year in the next three financial years; (3) aggregate tax expenditure floor for the federation for each financial year in the next three years. However, the revenue estimates and expenditure should be:

  - based on reliable and consistent data;

  - targeted at achieving the macroeconomic projections;

  - consistent with and derive from the underlying assumptions contained in the macroeconomic framework, government objectives, policies, strategic priorities and the explanations in the FSP;

- ✓ A Consolidated Debt Statement (CDS) describing the fiscal significance of the debt liabilities of the Federal Government and measures to reduce them; and

- ✓ There is also a statement explaining the nature and fiscal significance of contingent liabilities and measures to offset the crystallization of such liabilities.

More importantly, the Act provides for an aggregate expenditure ceiling, which can be interpreted as a fiscal rule. In this connection, aggregate expenditure in any fiscal year shall not be more than the projected aggregated revenue plus a deficit not exceeding 3% of the estimated GDP or any sustainable percentage as may be determined by the National Assembly. It is only on one condition that the aggregate ceiling imposed can be exceeded: if there is a threat to national security or sovereignty of the country, and the President of the Federal Republic of Nigeria should provide convincing explanations to the legislature that the security of the nation is indeed under threat. Table 2.2 relates to the fiscal deficit/GDP ratio of different measures, from 2005 - 2009. The budgeted deficit ratio exceeded the benchmark in 2009 reflecting government fiscal stimulus following the global financial crisis.

Table 2.2:   Fiscal Deficit/GDP Ratio, 2005 - 2009

S/N	Year	Budgeted Deficit/GDP (%)	Actual current Fiscal Deficit/GDP (%)	Actual Primary Deficit/GDP (%)	Actual Overall Deficit/GDP (%)
1	2005	2.8	3.0	1.6	-1.1
2	2006	2.4	2.9	0.8	-0.5
3	2007	2.9	3.6	0.5	-0.6
4	2008	2.5	4.5	1.4	-0.2

| 5 | 2009 | 3.9 | 2.1 | -2.3 | -3.3 |

The preparation of the MTEF is the responsibility of the Hon. Minister of Finance. However, in doing this, the Minister is obliged to consult widely with relevant offices and other stakeholders on the key components of the MTEF. The annual budget of the government now derives from the MTEF and the First National Implementation Plan of Vision 20:2020. It is further required that the distributions of expenditure estimates according to sectors and compositions should be consistent with the developmental priorities of government as are set in the MTEF.

2.6 FISCAL POLICY MAKING PROCESS IN NIGERIA: THE CASE OF FEDERAL BUDGETING

The federal budget is a very important fiscal policy tool in the sense that it is a means through which the country's resources are allocated among socio-economic needs to improve citizen's welfare. The federal budget outlines government's intended expenditure and its sources of financing. Also, besides showing a compilation of numbers about revenues, spending and government debt, the federal budget sets out national objectives and priorities and proposes initiatives in the fiscal year in focus (Obadan, 2003). More importantly, the objectives of the budget should reflect the government's development aspirations for the country.

Budgeting represents a key aspect of national economic management in Nigeria. It usually involves a series of activities, which are carried out in stages. Traditionally, the budget process includes the following steps (see Osanyintuyi, 2010):

- Determination of the financial resources available in the next fiscal year. The FMF, NPC, CBN and FEC take final decision on total expenditure and sectoral ceiling;

- Determination of level of government expenditure (FMF and NPC);

- Setting general priorities among and within various sectors. To be done by the NPC;

- Preparation of proposals for the capital budget and rolling plans, if any, to be done by the operating Ministries and Agencies within the set limit. This process commences with the issuance of budget call circular by the FMF;

- Review of financial estimates of the projects for inclusion in the budget. This is to be done by the BOF, while the FMF and NPC collaborates to harmonize positions;

- Scrutiny of the financial estimates of budget proposals. To be done by the BOF;

- Budget Hearing/Defense;

- Draft Final Budget;

- Consideration of Final Draft;

- Submission of budget in the form of Appropriation bill to NASS. Then, it follows its own processes/steps

- Authorization of the budget;

- Budget execution; and

- Budget monitoring and evaluation.

Normally, a complete budget cycle should at least be up to four stages, covering executive preparation, legislative consideration, implementation, and monitoring and evaluation. However, whether the budget process follows all the stages depends on the government regime type, democratic or military. Budgeting under a democratic set up is more appealing because it involves interactions among various stakeholders, such as politicians, bureaucrats and interest groups. As the various stakeholders have different economic interests, one can be sure that the budget process would engender conflicts of interests. The process is often more complex, engaging and can be characterized by lobbying. There is also tendency for stalemate situations, particularly if the legislature and the executive do not reach agreement on issues specified in the budget proposal. However, the process is quite different under a military regime, which operates a unified fiscal system. Here, the legislature is non-existent. Hence, the budgeting process is devoid of the conflicts and sometimes acrimonies inherent in a democratic budgeting (Obadan, 2003).

Over the years, the budgeting experience of Nigeria has been characterized by the following (see Obadan, 2003):

- Poor fiscal management;

- Non-observance of budgetary targets;

- Lack of transparency and accountability;

- Budget indiscipline;

- Absence of multi-year budgeting;

- Weaknesses in the institutional framework and insufficient link of the budget with national development plan;

- Lapses in budget formulation arising from deficient techniques; and

- Poor budget implementation.

Fig. 2.5:   The Budget Cycle in a Democratic Setting
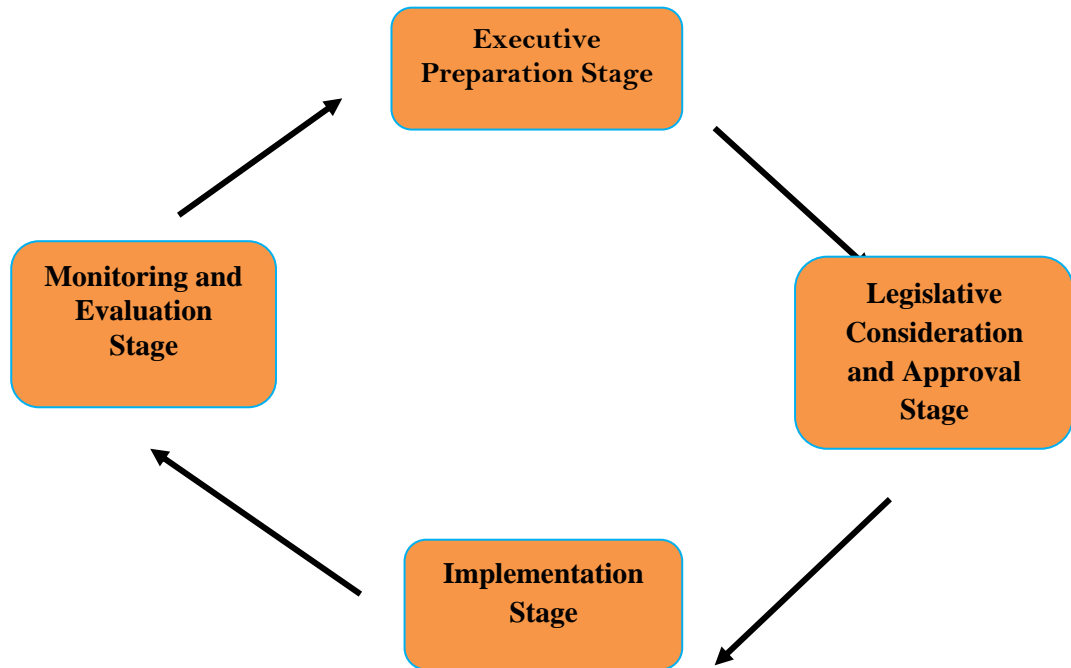
Source: Author.

On the shortcomings of the Nigeria's budget process, Osanyintuyi (2010) also identifies a number of them, namely:

- Lack of plan budget link and coordination – budget delinked from broader larger national development plan at all levels;

- High levels of extra-budgetary expenditure resulting in actual expenditure levels that bore no semblance to the budget;

- Weak monitoring and evaluation- This aspect of the budget cycle has not been given due prominence. Budgeting was done as if it ended with the authorization stage; and

- Non- participatory nature of the budget process. It has been seen mainly as a government programme than a national exercise.

However, since 2005 there have been some reforms in the budget process. Indeed, the federal budget has been prepared against the background of a Medium Term Expenditure Framework. Thus, many of the undesirable features of the budget process have been addressed successfully to a significant measure. The new approach involves a participatory process that appropriately connects the budget proposals with the country's long term development agenda, initially the National Economic Empowerment and Development Strategy (NEEDS) and the Millennium Development Goals (MDGs), the 7-Point Agenda and now the Vision 2020. In other words, a special feature of recent budgets is that they have been prepared within government policy thrusts, which tends to focus on current development challenges, covering poverty reduction, wealth creation, investment in physical and human capital and improving power supply, etc. For example, the central theme of the 2007 Budget was "Accelerating Physical and Human Infrastructure for Wealth Creation and Poverty Reduction". To this end, the budget made considerable provisions for improving physical infrastructure, such as roads and power. It accorded priorities to social safety nets and measures aimed at reducing the incidence of poverty. Also, the debt relief gain amounting to ₦110 billion was channeled to poverty reduction initiatives and Programmes in Health, Water, Education, Power, Housing, Agriculture and MDGs, among others. Box 1 highlights the budget process under the MTEF.

The next question one would ask is has budgeting in Nigeria resulted in improved social and economic outcomes? Unfortunately, the answer is 'NO'. Apparently, the

shortcomings in the budget process, among other economic concerns, tended to affect the outcomes. In sum, budgeting has not achieved Nigeria's development objectives. An examination of some social and economic indicators, which budgeting directly influences will tell the story. As noted earlier, and also demonstrated later in the Chapter, fiscal deficit continues to rise unabated in absolute terms, only showing some moderation recently in relation to GDP. The extent of economic growth does not also reflect the magnitude of government spending. For example, in 2009, real GDP grew by 6.7%, far below the economy's potential, while GDP Per Capita stood at a paltry ₦165,633.9. In 2005, agricultural output and industrial output improved by 7.1% and 1.7%, respectively. But, look at the situation four years later: agricultural output went down by 6.2%, while industrial output also fell by 0.8%. In particular, the industrial sector is not showing any sign of recovery, as average manufacturing capacity utilization stood at 55% in 2009. On the other hand, expansionary fiscal budgeting continues to pile pressure on inflation, which stood at 12.0% in 2009. In relation to GDP, Gross Fixed Capital Formation and Gross National Savings remain at 9.6% and 24%, respectively. The unemployment rate is in double digits, 11.9% in 2005, 12.9% in 2009 and 23.9% in 2011.

Further examining some social indicators, one would easily agree that the budgeting experience has also failed to raise the standard of well being of individual Nigerians. To see this, consider the Human Development Index (HDI), which measures the impact of economic policies on quality of life. The overall Nigeria's Human Development Index, according to the UNDP (2010), is 0.423. By this score, Nigeria ranks 142nd out of 169 countries. Now, look at some human development indicators, starting with the incidence of poverty, a critical measure of standard of living. The indicator stood at 70% as at 2001, implying that 84 million Nigerians live below the poverty line of one

U.S dollar a day (Obadan, 2003). However, current data, as documented by the National Bureau of Statistics show that poverty incidence has increased from 54.4% in 2004 to 69.0 % in 2010. Additional statistics from the World Development Indicators (2010) revealed the following situation in year 2009:

- ✓ Life expectancy at birth in years - male, 48.1, and female, 49 ;

- ✓ Infant mortality rate per 1000 life birth is 138;

- ✓ Incidence of tuberculosis per 100,000 is 295;

- ✓ Net primary and secondary enrolment rate are 61.4%; and

- ✓ Population with access to improved sanitation facilities is 32

Box 2.1: **The Budget Process under the Medium Term Expenditure Framework**

- The President directs the MOF and the BOF to prepare the budget in line with the vision and direction of the economy.
- Preparation of the Medium Term Revenue Framework (MTRF). This involves the projection of the expected revenue from oil and non-oil sources over the medium term. It is done by the BOF in consultation with relevant revenue collecting agencies.
- Preparation of the Medium Term Expenditure Framework (MTEF). It involves the determination of the amount of revenue that the government proposes to spend, further outlining the sub-allocation among the major expenditure heads, namely, statutory transfers, debt service and spending by the Ministries, Agencies and Extra-Ministerial Departments (MDAs). The difference between the available resources and the total budgeted spending is also established at this stage.
- Stakeholder consultation on the MTRF and the MTEF. Both documents are presented in a one-day interactive forum involving NASS, the Organized Private Sector (OPS), Civil Society Organizations (CSOs) and the public sector. The purpose is to obtain stakeholder input.
- Determination of the MDAs Envelopes: This involves the sub-allocation of the total MDA Expenditure among the various MDAs. Each MDA's expenditure envelope specifies its maximum spending limit. Allocation is guided by such considerations as payroll size and priority of service rendered. The centre of responsibility is the BOF
- MDAs prepare a Medium Term Sector Strategies (MTSS). This documents their goals and objectives against the background of government overall policy objectives. It also outlines key programmes to be carried out to achieve the stated goals within the limits of their expenditure.
- Preparation of the Fiscal Strategy Paper, including the MTEF and the MTRF and presentation to FEC for Approval.
- Circulation of the approved documents to NASS.
- Issuance of Budget Call Circular by the MOF, giving detail instruction to the MDAs on how to prepare and submit their expenditure estimates in accordance with government priorities and within limits of their expenditure ceilings. It is the responsibility of the BOF to make sure that MDAs prepare their proposals accordingly.
- The President formally presents the budget to a Joint Session of NASS.
- The various Oversight Committees of NASS conducts budget hearings, which provides further opportunities for stakeholder input in the budget process.
- The recommendations of the Oversight Committees are considered by the Appropriation Committees of the respective Chambers, making recommendations accordingly.
- The two Chambers meet to harmonize their respective positions. Once harmonized, the Appropriation Bill is transmitted to the President for assent.
- The President gives its assent and the Bill becomes Law.

Source: Okogu, 2009; Osanyintuyi (2010)

2.7 MONETARY POLICY MAKING PROCESS AND COORDINATION ARRANGEMENTS WITH FISCAL POLICY

Since the setting up of the MPC, monetary policymaking in Nigeria has become more transparent. While the monetary policy process itself is a fairly complex series of activities, it normally involves setting of monetary policy objectives, determining a nominal anchor (price or quantity), performing financial programming, and choosing monetary policy instruments and their application. Other activities include day-to-day conduct of monetary policy, covering routine tasks such as liquidity management, adjustment of policy rate, communication of policy decisions, feedback and evaluation of outcomes. All the four supporting Committees of the MPC are critical in the monetary policymaking process as is apparent from their various functions. Policy coordination between the government and the central takes place mainly through FLAC and the MPC. That is not say that other high level meetings between top officials of both institutions, including the CBN Governor and the President, are not part of the process.

FLAC provides a forum for exchange of information. As noted, all the government institutions that are in charge of revenue collection and disbursement are part of this meeting. Hence, data relating to government's fiscal plans, including expected revenue injections and withdrawals are readily available. Such data are examined to ensure consistency with the Bank's policy targets. The implications of government's plans on the liquidity of the economy are also assessed. However, in most cases, the Bank attempts as much as possible to obtain early signals of government fiscal behaviour and other developments such as movement in international oil prices. Monetary and fiscal policy interaction in Nigeria has been

further enhanced by the government's Medium Term Expenditure Framework (MTEF), which is forward looking in a very significant way. The improved transparency of fiscal policy has somewhat minimized fiscal surprises.

There is also a Monetary and Fiscal Policy Coordination Committee (MFPCC), which comprises of government agencies responsible for revenue collection and expenditure management, including the NPC. Others include the departments of the central bank in charge of monetary policy and financial markets. The Committee, which meets on a quarterly basis, is chaired by the Debt Management Office and has responsibility for promoting stability in the financial markets, especially the fixed income securities segment. It also provides an arrangement for the harmonization of fiscal and monetary policies with government's debt strategy, in order to achieve stability in the financial markets. The Market Development Department (MDD) of the DMO serves as the Secretariat of the Committee. There is another Debt Management related Committee, namely, the Bond Market Steering Committee (BMSC), which was established in 2007 and meets on a quarterly basis, too. According to the DMO (2008), the functions of the Committee are to receive the buy-in of all stakeholders and to speedily resolve any conflicts in policy objectives that may hinder the orderly development of the Nigerian bond market. Members of this Committee are drawn from the DMO, the CBN, the Securities and Exchange Commission (SEC), the Pension Commission (PENCOM) and the organized private sector.

At a much higher level, policy coordination takes place at MPC meetings. Recall that the Permanent Secretary, the administrative head of the FMF is a member of the MPC. Although the full details of what transpires in the meetings are usually

not disclosed, the Permanent Secretary is expected to bring government proposed plans and potential fiscal developments to the notice of other members in order to help them make informed decisions on monetary policy. The Permanent Secretary should also inform the Committee of any fiscal risks, which have implications for government fiscal projections. Ways to deal with these likely shocks can then be generally discussed. More so, should the government decide to change the course of its policies, this government representative discusses the reasons for the change with other members. Then, based on the information received, the Committee is able to assess the contributions to aggregate demand that would likely result from government's fiscal actions. Together with the economic report prepared by the relevant Departments of the central bank, the Committee is able to decide whether to raise the MPR or not and by how much percentage point. Much as the analysis by the bank staff is helpful, outside members are also expected do their own individual research and analysis. In circumstances, where the meeting is unable to agree unanimously, the MPR is decided by simple majority vote.

Figure 6 shows the process of monetary policy making in the context of information flow among the Committees of the central bank.

Fig 2.6:   The Monetary Policy Making Process and the Determination of the Monetary Policy Rate (MPR)
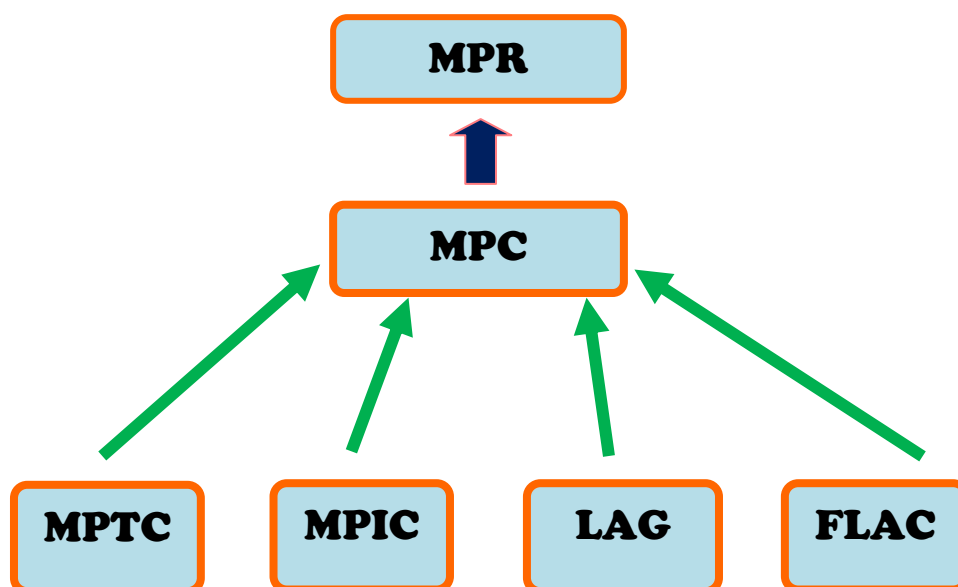
Source: Author

Table 2.3:   Monetary Policy Committee's Decision on the MPR, 2006 – 2011

Date of Meeting	MPR	MPC Decision
2006		
14 February	13.0	Unchanged
8 June	14.0	Raised by 100 basis point
9 August	14.0	Unchanged
2007		
7 February	10.0	Unchanged
5 June	8.0	Reduced by 200 basis point
1 August	8.0	Unchanged
3 October	9.0	Raised by 100 basis point
4 December	9.5	Raised by 50 basis point
2008		
5 February	9.5	Unchanged
1 April	10.0	Raised by 50 basis point
2 June	10.25	Raised by 25 basis point
5 August	10.25	Unchanged
18 September	9.75	Reduced by 50 basis point
11 December	9.75	Unchanged
2009		
9 February	9.75	Unchanged
8 April	8.0	Reduced by 75 basis point
7 July	6.0	Reduced by 200 basis point
6 September, 2009	6.0	Unchanged

3 November, 2009	6.0	Unchanged
2010		
4-5 January, 2010	6	Unchanged
1-2 March, 2010	6	Unchanged
10-11 May	6	Unchanged
21 September	6.25	Raised by 25 basis point
22-23 November	6.25	Unchanged
2011		
21-22 March	7.5	Raised by 100 basis point
23-24 May	8.0	Raised by 50 basis point

Source: CBN Annual Report and Financial Statements and Monetary Policy Communiqué

Table 2.3 and Figure 2.7 illustrate the decisions by the Committee from February 2006 to May 2011. Box 2.2 further illustrates the specific decisions taken in year 2008 and the basis for which the decisions were reached. In the 26 meetings held during that period, the MPR was raised 8 times, reduced 4 times and kept unchanged 14 times. It indicates that the MPC has adopted a more cautious approach towards policy setting, mainly to rein in inflation.

Fig 2.7: Monetary Policy Rate Movement, 2006 - 2010

Source: Author using data from the Central Bank of Nigeria
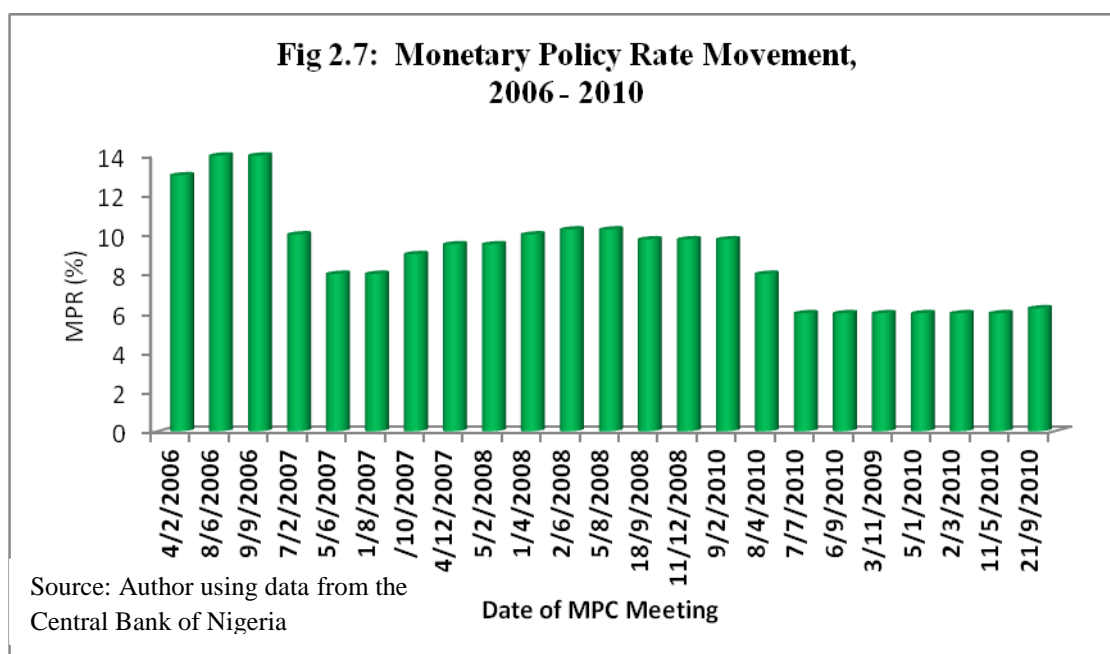
Box 2.2: The Monetary Policy Committee Decisions, 2008

Date	Decisions
February 5, 2008	It reviewed the major domestic and international macroeconomic developments and observed that the outlook for 2008 was positive, but there were many elements of uncertainty. Thus, it decided to leave the MPR unchanged at 9.5% and also continue to use open market operations for liquidity management and appropriate exchange rate policies.
April 1, 2008	Several developments, which threatened the single digit inflation objective of the central bank, informed the MPC's decision at this meeting. These include: the impact of the growth of monetary aggregates in year 2007, which became manifest in the first quarter of the year; the impact of continued inflow of foreign private investment into the economy; the actual and potential effect of the distribution of excess crude revenue, and increase in government expenditure. In consideration of these, the following decisions were reached: ▪ Raised the MPR by 50 basis point from 9.5% to 10%. ▪ Issue treasury bills for liquidity management. ▪ Increase the sale of foreign exchange.
June 2, 2008	Having observed the upward movements in oil and food prices, fiscal expansion, and conditions in the international financial market, the MPC decided to: ▪ strengthen the use of open market operations and special sale of foreign exchange. ▪ raise MPR by 25 basis points from 10.0% to 10.25%. ▪ Increase the Cash Reserve Ratio (CRR) by 100 basis points from 3.0% to 4.0%. ▪ Set up a technical committee to determine other intervention securities to further strengthen the effectiveness of liquidity management.
August 5, 2008	Mixed macroeconomic outcomes characterized by rising interest rate and inflation despite stability in exchange rate. For this reason, the following decisions were made: ▪ Maintained the MPR at 10.25% since the core inflation is expected to moderate. ▪ Common year end requirement for banks was cancelled. Decision was left to their discretion.
September 18, 2008	Economic fundamentals remained generally strong, despite the global financial crisis. But, to ensure that the system continue to function smoothly, the MPC decided to loosen monetary policy, thus, it did the following: ▪ reduce the MPR to 9.75% from 10.25%. ▪ reduce CRR from 4% to 2% . ▪ reduce the liquidity ratio from 40% to 30%. ▪ allow repo transaction against eligible securities for 90 days, 180 days and 360 days ▪ the Bank to now buy and sell securities through the two-way quote.
December 11, 2008	Following declining oil demand from the advanced countries, despite falling oil prices that had the potential of weakening fiscal and external payment balance in 2009, the MPC decided to leave the MPR unchanged at 9.75%. It also reduced the bank's foreign exchange net open position from 20% to 10% of shareholders funds.

Source: CBN Annual Report and Financial Statements, 2008

2.8 CENTRAL BANK TRANSPARENCY AND COMMUNICATION AND IMPLICATIONS FOR MONETARY POLICY

Central bank transparency and communication are two related concepts that have featured prominently in the central banking literature in recent times. In simple terms, transparency means openness. In the context of monetary policymaking, it involves publishing the central banks' analysis of economic prospects and previous economic developments so that the public and the legislature can assess their performance and make them accountable for their actions (Donnel and Bhudia, 2001). Specifically, there are three main areas in which transparency is required: (a) transparency about monetary policy objective; (b) transparency about the forecasting methods and information concerning the state of the economy; and (c) transparency about the actual decisions and why they are reached (Gersbach and Hahn, 2001). Overall, the purpose of transparency is to ensure accountability of monetary policy decisions. Central bank communication, on the other hand, is the provision of information by the central bank to the public regarding such matters as the objectives of monetary policy, the monetary policy strategy, the economic outlook, and the outlook of future policy decisions (Blinder et al., 2008). Communication therefore enhances the transparency of the central bank. Indeed, the greater autonomy now being enjoyed by central banks meant that they should be more accountable

Lambert (2006) observes that in the past two decades, or so, central banks across the world have become extremely open particularly about their policy decisions and the circumstances in which these decisions are made. Before then, they were generally less willing to notify the public and financial markets about their interest rates decisions for fear that this action could undermine their flexibility. Their

greatest concern was how the markets would react to the information released. For this reason, business editors, economic commentators and the Press in general, were effectively kept out of the central banks. Referring to the situation at the Bank of England, Lambert notes that the job of the Press Officer was explicitly to keep the Bank out of the Press and the Press out of the Bank. But to Blinder (2008), the independent central bank has a duty to explain its actions and reasons that underlie those actions. By so doing, it reinforces the bank's public legitimacy. Also, it is now recognized that markets work better with more information. In other words, as long as central banks remain central to the functioning of the markets, a good understanding of its behaviour should improve asset pricing. The reason is that central banks' pronouncements influence expectations and therefore move asset prices (Blinder et al., 2008).

By communicating more, the central bank's actions become more predictable, which in turn reduces financial market volatility. In addition, market participants are also able to make decisions more efficiently. In the words of Lambert (2006), "in normal circumstances, monetary policymakers only have a single policy instrument to play with, that is, the ability to influence short term interest rates, but the big decisions that affect supply and demand in an economy and which determine price developments over the medium term are shaped much more by medium and longer term rates, over which central banks have little direct control". For this reason, communication of policy decisions has become an integral part of and a veritable tool for the implementation of modern day monetary policy (Egbuna, 2008). In extreme circumstances, communication used to anchor and guide market expectations may even become the main tool of monetary policy (Blinder et al., 2008).

There are five concerns about central bank communication that need to be discussed and probably settled. The first, which has been mentioned earlier relates to the importance of communication. As noted, it helps to improve the effectiveness of monetary policy, and also builds transparency and accountability. The second issue has to do with what information should be communicated and how much of it should be given out for fear of introducing noisy signals into the financial system. Too much talk could create confusion. However, it is generally agreed that information should at least cover the following: basic central bank's objectives and mandates, its monetary policy framework, strategies, successes and failures. As monetary policy decision making is dangerously limited by various kinds of uncertainties, the central bank should therefore also do well to explain the limits of its knowledge resulting from these challenges. More so, a central bank that is interested in being truly transparent must listen to its target audiences so as to understand how its communications are received and what type of information is deemed useful (Blinder and Wyplosz, 2004). The third issue is, to whom should central banks communicate with, and what would they want to hear. In this connection, the broad audience includes: financial markets, economic commentators, the public and politicians. All of them are important in their own way. But, the important thing is to understand the audience and how best to communicate with them. For example, information communicated to the general public and also politicians, who are generally not interested in the technical details, should be simple, clear and consistent.

The CBN has made commendable progress towards improving its monetary policy formulation and communication of overall activities, including policy decisions. Since 1999, monetary policy has become more transparent. Towards this

end, the Bank established the Monetary Policy Forum (MPF) in year 2000, a medium through which it has fostered dialogue with the banking community and other stakeholders. The MPF also serves a forum for educating the general public about the statutory functions of the Bank and the sustenance of its autonomy and credibility (CBN, 2000). The Bank has held several seminars covering topical economic issues, drawing attendance from the banking sector, top government functionaries, members of NASS, the organized private sector, the academia, and international monetary and financial institutions. In year 2001, it commenced the publication of the MPC decisions on monetary and exchange rate to fulfill the general principles of the code of good practices and transparency in monetary policy. The MPC decisions are now published as a Communiqué.

Very recently, the Bank started publishing the Minutes of MPC meetings. The first publication following the MPC meeting of 21st September, 2010 was mainly unattributed in nature. Indeed, apart from occasional references to the Governor and his Deputies, one hardly knew who said what because the identities of the members who made comments were hardly disclosed. In the view of these, Egbuna (2008) notes that releasing the complete transcript or broadcasting meetings, could affect deliberations at MPC meetings because members may be less willing to engage in frank discussion for fear of being misinterpreted. Enhanced transparency in this context might induce the media to dramatize differences in opinion among policymakers, and could possibly lead to politicizing deliberations. Thus, it is suggested that the MPC should carefully consider what information to be provided and how best to get it across to the public. Noticeably, however, the publication of the

Communiqué of the March 2011 meeting marked a significant departure, as the personal statements of members, including their voting records were published.

Fig 2.8:   **The Communication Channels of the CBN**

2.9 MACROECONOMIC POLICY OBJECTIVES IN NIGERIA

There are several macroeconomic policy objectives relating to fiscal, monetary, financial, trade, commercial, income, debt and exchange rate issues in Nigeria. Generally, the aim of macroeconomic policy is the achievement of output stabilization in the short run and a diversified economic growth in the long run (Iyoha, 1996). Baumol and Blinder (2009), summarize the goals of macroeconomic policy as achieving rapid but relatively smooth economic growth with low unemployment and inflation. From these, it is clear that the goals of macroeconomic policy have short and long run components. In the short run, the intention is to stabilize the economy. That is, to prevent excessive expansion of output during periods of boom and excessive contraction during periods of recession. Thus, short run macroeconomic policies are essentially countercyclical in nature. However, the long run objectives are directed towards achieving rapid economic growth, full employment, price stability, and balance of payment equilibrium. In developing countries, Nigeria included, there are also concerns for debt management, poverty reduction, income redistribution, provision of basic needs, etc.

Nigeria has witnessed all the phases of the business cycle. Examining the long term pattern reveals the following secular trend: rapid decline, 1965-1968; revival, 1969-1971; boom, 1972-1980; crash, 1981-1984; renewed growth, 1985-1991; and wobbling, 1992-2000 (Ukwu, Obi and Ukeje, 2003). Since 2001, growth in output has been fairly high and stable. Moreso, considering that the economy has been largely underdeveloped, it is not surprising that macroeconomic objectives tended to have long term outlook. Nevertheless, macroeconomic stabilization remains a key concern, particularly during periods of economic recession. In this context, stabilization refers

to the use of a set of demand management measures to remove some macroeconomic imbalances, which if allowed to persist, could be inimical to long term growth (CBN, 1997). As was the case during the 1980s, many governments, including that of Nigeria adopted economic stabilization programmes to specifically stimulate growth and address a number of economic problems, including external reserves depletion, mounting fiscal deficit, growing current account imbalance, and inflation. In this regard, the objective of a stabilization programme is usually to correct financial and economic imbalances, control inflation and provide the foundation for eventual economic recovery (Obadan, 1996). For example, during the period of 1981–1984, the macroeconomic policies were targeted at reversing the recession that hit the economy following the crash in crude oil prices, as Box 2.3 reveals.

Box 2.3: Macroeconomic Policy Objectives of Nigeria in Periods of Economic Recession, 1981 - 1984	
Year	**Objective**
1981	- achieve acceleration in the rate of domestic productivity by expanding productive capacities of the agriculture and manufacturing sectors. - reduction in the rate of growth of inflation. - attainment of healthy balance of payment in terms of an acceptable level of external reserves.
1982	- correct unhealthy balance of payment developments. - reverse the upward domestic price movements. - accelerate economic expansion.
1983	- reduce import to correct balance of payment disequilibrium. - promote expansion of domestic production. - reduce inflation. - mobilize domestic savings to facilitate the expansion of domestic investment. - encourage and protect local industries. - diversify the national economy.
1984	- correct unhealthy balance of payment. - stimulate domestic production. - curtail unsustainable government expenditure.
Source: CBN Annual Report and Statement of Accounts, 1981 –1984	

2.9.1 Monetary Policy Objectives in Nigeria

The objectives of monetary policy differ across countries. In current times, however, low and stable inflation has become the key objective of monetary policy. Essentially, the success of the monetary authority in the performance of its functions rests on its ability to ensure price stability. Nowadays, the objectives of monetary policy are explicitly stated in the central bank laws. In some countries, particularly those that practice inflation targeting, the central bank has a single objective. In most cases, however, the central bank pursues multiple objectives.

In Nigeria, the objectives of monetary policy have not changed much over the years, only that from 2007, the maintenance of monetary and price stability became a top priority, as indicated in the Central Bank Act, 2007. Before then, the issue of legal tender currency and maintenance of external reserves were the two top preoccupation of the Bank. To achieve the price stability objective, the CBN should as a matter of necessity monitor government spending since persistent huge deficits tend to lead to price volatility. It is in this connection that it has adopted several measures in collaboration with the fiscal authorities to minimize fiscal surprises and hence control inflation. Usually, the Bank determines the growth of money supply consistent with the overall goals of policy. Then, it routinely controls the level of liquidity in the system to meet the set growth target. From December 2006, focus shifted to manipulating the Monetary Rate (MPR), which is now the nominal anchor for monetary policy in Nigeria.

There are five core mandates of the CBN, according to Section 2, Part 1 of the Act, namely: to ensure monetary and price stability, to issue legal tender currency,

to maintain external reserves for the purpose of safeguarding the international value of the legal tender currency; to promote a sound financial system, to act as a Banker and economic and financial adviser to the Federal Government. A review of monetary policymaking in Nigeria by the CBN indicates that it started engaging in the issue of legal tender currency in Nigeria as far back as 1959, immediately after its establishment. Since then, it has issued, introduced and circulated various denominations of the Naira and Kobo, for various reasons, including the simplification of financial transactions, reduction in the volume and cost of production, and checking currency counterfeiting. Also, through debt and foreign exchange management, the external reserve objective, has been promoted to safeguard the international value of the Naira.

2.9.2 Fiscal Policy Objectives in Nigeria

Fiscal policy objectives of government are basically the same across countries, the key difference lies in the weight attached to the specific objectives depending of course on the level of economic development. For example, in the UK, fiscal policies are now aimed at maintaining sound public finances over the medium term, based on strict rules. The government's central economic goal includes high and sustainable levels of growth and employment (HM Treasury, 2000). Wherever possible, it also supports monetary policy over the cycle, helping to smooth the part of the economy in the face of variation in demand and provide further support through changes in fiscal stance. In view of Nigeria's level of economic development, fiscal policy objectives have tended to focus on addressing key macroeconomic concerns, such as increasing output growth, reducing unemployment, ensuring fiscal discipline, and reversing unfavorable payment imbalance. There have also been attempts to create an

environment conducive of private sector led growth. Poverty reduction is another top priority of government. Table 2.4 outlines the thrusts of fiscal policy in Nigeria over the period, 1990–2008.

Table 2.4:   Fiscal Policy Thrusts, 1990 - 2008

Year	Policy Thrust
1990	▪ To consolidate and sustain national development with emphasis on dampening inflationary pressures, curbing excessive monetary expansion, moderation of exchange rate fluctuation, streamlining government expenditures, etc.
1991	▪ Policy designed to further streamline the workings of a deregulated economy. It was growth oriented.
1992	▪ To consolidate the gains of economic restructuring and promote greater efficiency, productivity and increased employment.
1993	▪ To consolidate the gains of economic reform, achieve macroeconomic stability, accelerate the rate of economic recovery and promoting sustainable growth.
1994	▪ Restore fiscal discipline, improved financial transparency and accountability, restore macroeconomic stability and stimulate the growth of productive sectors.
1995	▪ Policy of guided deregulation necessitated by the need to introduce some flexibility in economic management.
1996	▪ To consolidate and build on the modest gains and stabilization realized in 1995.
1997	▪ To achieve sustainable output growth and external sector viability predicated on dominant role of the private sector.
1998	▪ To stimulate production and hence effectively address the twin problems of unemployment and poverty.
1999	▪ To establish and strengthen the framework for government intervention in the economy. Policy measures were directed towards establishing the institutional, legal and regulatory framework and reforms necessary for growth, diversification, enhance capacity building and utilization, expand revenue base, rehabilitate physical infrastructure, among others.
2000	▪ To foster growth in the real sector and maintain macroeconomic stability.
2001	▪ To restructure the economy to make it market-oriented, private sector led and technology driven. It also aimed at reducing unemployment, improve infrastructure, enhance transparency and accountability.
2002	▪ Policies were derived from the macroeconomic framework of the 2001 – 2003 Rolling Plan. It sought to maintain fiscal and monetary discipline, continue economic liberalization, and sustain transparency, accountability and obtain value for money in government expenditures.

2003	▪ To achieve fiscal stability, improve non-oil sector competiveness, reduce inflation, maintain a fiscal deficit of not more than 2.5% of GDP, deepen and broaden fiscal incentives to encourage the industrial and manufacturing sector.
2004	▪ Anchored the government reform programme with a focus on job creation, employment generation for youths through fostering of enabling environment for the private sector to thrive, and thus creating jobs.
2005	▪ To build physical and social infrastructure necessary for job creation and maintain fiscal discipline. Policies emphasized the involvement of the private sector in the management of public investment and provide safety nets for the vulnerable group, such as youths, women and children to lessen the negative impact of reforms.
2006	▪ To boost infrastructural development with the aim of empowering the private sector to create wealth and protect the poor. It is continuation of the NEEDS Reform Programme.
2007	▪ To accelerate investments in basic infrastructure and human resource capital.
2008	▪ To consolidate the growth of the economy and translate the macroeconomic gains of the recent past into tangible improvement in living standard.

Source: CBN Annual Reports, various issues.

2.10 INSTRUMENTS OF MACROECONOMIC POLICY

The instruments of macroeconomic policy are the tools applied by the fiscal and the monetary authorities for macroeconomic management. In order words, each of the two main components of macroeconomic policy, namely, fiscal policy and monetary policy, has its specific instruments or tools. Fiscal policy refers to the decisions made by the government with respect to taxes and spending. Thus, fiscal policy instruments include taxation, public expenditure and debt management policies. Monetary policy, on the other hand, covers the actions taken by the monetary authority to regulate the value, availability and cost of money or credit. Among others, monetary policy instruments comprise interest rate, money supply, and reserve requirements. Both monetary and fiscal policies are directed at achieving the short-and long run macroeconomic objectives. Other instruments, which are used in addition to fiscal and monetary policies include: trade policy, exchange rate policy, income policy and debt management policy. Normally, the prevailing economic circumstance informs the decisions about which instrument to apply.

The uncertainty associated with policymaking, implementation and outcome, point to the advisability of combining the use of instruments.

In the context of macroeconomic stabilization in Nigeria, fiscal, monetary and exchange rate policies, no doubt, have been deployed more frequently. Fiscal and monetary policies tended to have absorption changing effects, while exchange rate policy tended to be expenditure switching in nature. In practice, however, the central concern is to use a combination of instruments that is capable of attaining the stabilization objectives, while being supportive of future structural changes in the economy and least disruptive to long term growth. A balanced approach is thus recommended instead of burdening one instrument of policy.

As observed in many other developing countries, two policy regimes are easily identified in Nigeria mainly in relation to monetary policy: direct control era and indirect control era. Before the introduction of financial sector reforms of 1986 that accompanied the Structural Adjustment Programme (SAP), the CBN conducted monetary policy by direct control. To this end, the instruments of policy included: credit ceilings, sectoral credit allocation, interest rate controls, moral suasion, special deposits, issuance of stabilization securities, and exchange controls. In addition to its traditional taxes and public expenditures, fiscal policy measures were majorly regulatory in nature, too. For example, considering that the economic stabilization programme of 1980–1985 was consequent upon the collapse of crude oil prices in the international market, the obvious strategy then was to reduce domestic absorption through direct controls and regulation. Hence, the fiscal and monetary tools utilized included exchange rate controls, tariffs, ban, credit rationing, and a fixed exchange rate, among others.

In relation to monetary policy, the downside of direct controls included: absence of competition and efficient use of resources, as more efficient banks would not be allowed to expand their credit operations; distortions of markets caused by selective credit controls; and the encouragement of disintermediation (CBN, 2009b). The indirect tools of monetary policy, on the other hand, generally concern the CBN's control of base money with the ultimate goal of influencing interest rates, quantity of money and credit in the banking system. Under this approach, the bank manages the monetary base or any of its components, while the interest rate and credit allocation are market determined. In this connection, the commonly applied tools, many of which are administrative devices include: Open Market Operation (OMO), cash reserve requirements, discount window operations, liquidity ratios, repurchase agreements, and moral suasion, among others.

Two monetary tools, OMO and discount rate deserve further consideration. In a sense, both are ways of announcing the intended policy direction of the bank to the financial markets. The distinguishing feature between the two lies in that fact that adjustment of the discount rate is a loud way of doing it, while OMO is more subtle. OMO has been very useful in Nigeria where other tools are unsuitable, particularly in the context of the day-to-day management of domestic liquidity. Indeed, since its introduction in 1993, the CBN has deployed this important tool to manage short-term liquidity as well as long-term monetary control. Although, it may have succeeded in minimizing movements in short term interest rates, it appears not to have been able to control monetary and credit expansion as the bank has been forced to regularly finance government deficit (CBN, 2009b). In December 2006, the CBN introduced a new monetary policy framework, in the hope that it would stabilize the domestic currency value. A defining feature of the new framework is that the discount rate was replaced by

the Monetary Policy Rate (MPR), an operating target. The MPR now serves as the nominal anchor upon which the inter-bank money market rate and other Deposit Money Banks' interest rates are based.

On its part, the government has used public expenditure as the main instrument in controlling economic activities. In addition, there have been tax policy measures and fiscal incentives aimed at generating more revenue to the government and generally influencing aggregate demand. On a few occasions, comprehensive tax reforms were undertaken. But most times, fiscal measures centred on lowering tax rates, broadening the tax base, increasing tax allowances, tax credit, exemption and tax holiday, revision of the revenue allocation formula, introduction of trade liberalization schemes, introduction of VAT to replace sales tax, tax relief, abrogation of some taxes, establishing Export Processing Zones (EPZ), review of import duties, and removal of excise duties. Box 3 illustrates some specific tax policy measures undertaken by the government in 1994, 1997 and 1998.

Box 2.4:	**Tax Policies and other Fiscal Measures of the Government, 1994, 1997 and 1998**
Year	**Tax polices/fiscal measures**
1994	- Progressive tax policies aimed at reducing tax burden on workers and encourage investment. - Thus, withholding tax rate was raised from 5% to 10%. - VAT at a tax rate of 5% was introduced to replace sales tax, covering 17 items of goods and 24 items of services. - Tax relief of ₦2,500 to low income earners. - Upward review of children allowance to ₦1,500 per child subject to maximum of 4 children. - Further reduction in the marginal rate of personal income tax from 30% in 1995 to 25% in 1996 with the objective of raising disposable income and shift emphasis from income to consumption as basis for taxation. - Additional fiscal incentives were granted to manufacturing firms in the form of tax reliefs on profit on export-oriented activities, while earnings dividend, interests, rent, royalties, fees and commissions attracted 100% tax rebate. - Tax allowances to research and development activities, and for the manufacture of locally made spare parts, tools and equipments, with a three-year tax holiday at inception - Review of the VAT revenue sharing formula to ensure equitable distribution of the proceeds among the three tiers of government. - Professional accountants were involved in the collection of customs duties to enhance.
1997	- Publication of the list of taxes and levies by the Joint Tax Board in order to minimize the adverse implications of multiple taxes. - State governments were discouraged from the use of tax contractors as internal revenue collectors. - Interest payment on loans in respect of agricultural trade business, companies or persons engaged in the fabrication of local plant and machinery and working capital credit from the Family Economic Advancement Programme (FEAP) to be tax deductible. - A waiver of tax clearance requirement of interest or dividends for Withholding tax exempted for VAT, including plant and machinery important for use in the Export Processing Zone, gas utilization in the agricultural equipment and implements purchase for agricultural development purchases, fertilizers, agro-chemicals and water treatment chemicals. - Incentives for gas exploitation investments necessary to separate gas from oil and tax holiday for downstream operations.
1998	- Strengthening tax administration through the establishment of tax authorities by the three tiers of government and thus boost revenue mobilization. - Granting of generous tax reliefs to raise the level of disposal income of households and strengthen domestic demand. - Thus, the minimum tax free income was raised from ₦10,000 in 1997 to ₦30,000 - Excise duties on domestic manufacturers were abolished. - Capital gain tax on stocks and shares was abolished to encourage investment and also boost the growth and development of the capital market. - Upward review of States and LGCs share of revenue from VAT, 40% and 25% respectively to 45% and 30%, and consequent reduction in the Federal government share from 35% to 25%. The aim is to compensate the States and LGCs for anticipated revenue loss from income tax. - Increase in penalty for gas flaring to encourage harnessing of gas resources and enhance government revenue. - Review the import duty rates to protect local industries and stimulate competition. - Reduce the number of items on the import prohibition list and make them dutiable at rates ranging between 20% and 150%.

Source: CBN Annual Report and Statement of Account 1994 , 1997 and 1998.

2.10 STABILIZATION PROGRAMMES IN NIGERIA: A HISTORICAL PERSPECTIVE

In the context of developing economies, macroeconomic stabilization is usually seen as a set of demand management measures directed at removing macroeconomic imbalances and distortions, which are found to impede the long term growth of the economy. In the case of Nigeria, a number of stabilization programmes have been adopted over the years to address the basic elements of macroeconomic instability including the following:

- expanded government spending leading to the build-up of huge fiscal deficits;

- rapid monetary expansion;

- excessive government borrowing;

- inflation;

- chronic overvaluation,

- reduced export competitiveness;

- rising huge domestic and external debt overhang;

- and

- unsatisfactory growth

Five different phases of stabilization programme are recognized in Nigeria, 1980 – 1985, 1986 –1987, 1988 – 1993, 1994, and 1995–1997. As highlighted in Box 2.5, the periods differ with respect to specific policies adopted and the macroeconomic outcome achieved. Early attempts at stabilization during the 80's were due to reasons that are well known: the reversal of oil fortunes of the 1970s as a result of falling crude oil prices occasioned by the international oil glut. The Federal Government, having

observed the persistent deterioration of the balance of payment throughout 1981, proposed an emergency package in April 1982, which was speedily passed into law by the National Assembly, as the Economic Stabilization Act, 1982. The Act specified measures to protect the external reserves, which had fallen to precarious levels that could not even cover one month of import at the time. These measures, which were both short-and long term in design, aimed at restructuring the economy and diversifying the foreign exchange base. Table 2.5 highlights the key elements of the Act.

Table 2.5:   Elements of the Economic Stabilization Act, 1982

Broad Policy Measures	Elements
Exchange Control	- Reduction of Basic Travel Allowance from ₦800 to ₦500 for persons aged 16 and above. No allowance for children under 16 years. - Number of Pilgrims permitted to perform the Hajj in 1982 was pegged at 50,000. - Reduction in Business Travel Allowance from ₦3,000 to ₦2,500 for registered companies. - Re-introduction of pre-shipment inspection for spare parts, raw materials and books and the introduction of same for frozen and canned foods. - The powers of authorized dealers to grant exemption were limited to applications for amounts of not more than ₦5,000 as against ₦10,00 previously in force. - The life of Form 'M' was restricted to 6 month as against one year. Also, registration for the Form was centralized at CBN headquarters.
Fiscal Policy	- Total ban on additional commodities, including frozen chicken and gaming machines, while 29 others were moved from general to specific import license requirements. - Tariff changes on 49 import items in the form of increase in rates and introductions of new rates. - New rates of excise duty, ranging from 5% to 45% were imposed on a number of commodities, covering cigarettes, towels, fabrics, cosmetics, perfumes, paper napkins, electric fans, locks, bicycles and motor cycles. - Intensification of anti-smuggling activities, includingothers measures such as adequate remuneration to custom officers and informants, introduction of more container depots and X-ray equipment, intensification of markets, seaports and airport raids, while stepping up training facilities of custom officers.

Monetary Policy	- Compulsory advanced payments were imposed on certain classes of imports. To achieve this, commercial banks were directed to create a separate account for the deposits, which would be subsequently transferred to the CBN free of interest. - However, no advanced deposits measure was imposed in respect of imports for which credit facilities of more than 6 months from the date of shipment had been obtained.

Source: CBN Annual Report and Statement of Account, 1982.

Popularly tagged "Austerity Measures" the initial efforts, covering 1980–1985, failed to yield the desired outcomes because of the defective policy mix. According to the CBN (1998), since the goal was to reduce domestic absorption, fiscal tightening with complementary monetary policy would have been ideal. It was further noted that although the Nigeria's second programme of economic recovery, the IMF-supported Structural Adjustment Programme (SAP), which covered the period July 1986 to June 1988, yielded some satisfactory results, the social consequences were far too much for the poor to bear due to lack of safety nets. It is recalled that the policy package was introduced against the backdrop of serious economic problems faced by the country since 1981. SAP is probably the boldest attempt ever taken by the government to address the economic problems. In broad terms, its aim was to alter and restructure the consumption and production patterns of the economy, as well as eliminating price distortions and heavy reliance on crude oil export and imports of consumer and producer goods. Specifically, the following constitutes the major objectives, as documented in the CBN Annual Report of 1986:

✓ Restructure and diversify the productive base of the economy in order to reduce dependence on the oil sector and on imports;

✓ Achieve fiscal and balance of payments viability;

✓ Lay the basis for sustainable non-inflationary growth or minimum inflationary growth;

✓ Lessen the dominance of unproductive investments in the public sector, improve the sector's efficiency and intensify the growth potential of the private sector.

Accordingly, the three main strategies adopted to realize the objectives of SAP include: (a) adoption of a realistic exchange rate in addition to the liberalization of the external trade and payment systems; (b) adoption of appropriate pricing policies in all sectors of the economy with greater reliance on market forces and reduction of complex administrative controls; and (c) further rationalization and restructuring of public expenditure. Meanwhile, the Stop-go approach to policy implementation characterized by discontinuity and inconsistency during 1988–1994 did not produce satisfactory outcomes. However, macroeconomic performance improved to some measure during the 1995–1997 phase owing to effective implementation of fiscal policy and other complementary policies. On a general assessment, stabilization efforts were successful when fiscal discipline was attained with relative consistency with other economic initiatives such as a strong commitment to deregulation (CBN, 1998). Of important note, outcomes under direct controls were unsatisfactory.

	Box 2.5: Phases of Stabilization Programmes in Nigeria, 1980 –1997	
Period	**Policies**	**Outcomes**
1980- 1985	▪ Regulation/Controls – restrict import demand through foreign exchange control, increased tariffs, ban, adoption of a fixed exchange rate, credit rationing, concessionary interest, widespread interventions.	▪ Very little economic stability e.g. overall fiscal deficit/GDP peaked at 12.8% in 1982, averaging 6.6% over the period. ▪ Excessive monetary expansion with an average of 4.4% in 1981-1982 to 17.6% in 1985. ▪ Inflationary pressure mounted rising from 20.9% in 1980 to 39.6% in 1984 ▪ Overall BOP and current account deficit ▪ Enormous debt burden.
1986-1987	▪ De-control in the context of SAP- abolition of Commodity Boards, export trade liberalization, cut-back in budgetary spending, reduction in petroleum consumption subsidy. ▪ Tight monetary stance.	▪ Outcomes were somewhat satisfactory ▪ Fiscal deficit/GDP dropped from 13.4% in 1986 to 5.4% in 1987. ▪ Money supply decelerated to 1.2% in 1986. ▪ Economic growth stagnated. ▪ BOP improved with significant reduction in current account deficit. ▪ There were adverse social consequences on the poor. No safety nets.
1988-1993	▪ De-controls with moderation in monetary and fiscal policies ▪ liberalization of the financial system and foreign exchange market. ▪ Fiscal easing.	▪ Gains realized in the previous year were wiped out. ▪ Deficit/GDP stood at 8.4%, 6.7%, and 8.2% respectively in 1988, 1989 and 1990 ▪ Growth in money supply. ▪ Inflation escalated- 38.3%, 40.9% and 57.2% in 1988, 1989 and 1993, respectively.
1994	▪ Re-regulation and direct controls – fixed exchange rate, pegging of bank lending rates, abolition of domiciliary accounts, direct allocation of foreign exchange.	▪ Widening in parallel market exchange premium. ▪ Inflation stood at 57% ▪ The fiscal deficit/GDP ratio and monetary aggregate at 7.7% and 47.8%, respectively ▪ The BOP deteriorated further.
1995-1997	▪ Guided Deregulation – liberalization of the foreign exchange market, deregulation of the current account, fiscal prudence, accountability and transparency, further reduction in subsidy in domestic consumption of petroleum products, tax and import duties reform.	▪ Improved performance of the economy because of the effective implementation of fiscal and complementary monetary policy. ▪ Consistent decline in inflation from double digit in 1997 to single digit for the first time since 1991. ▪ Real output growth maintained a steady rise, though below targets. ▪ Surplus in fiscal operations of the government.

Source: CBN Annual Report and Statement of Accounts, 1996 and 1997

2.11 CENTRAL BANK INDEPENDENCE

A key institutional feature of modern banking practice is Central Bank Independence (CBI). Orhanides (2008) emphasizes that CBI is probably the most

important lesson regarding central banking over the past 50 years. It is generally regarded as a very critical element in the design of a central banking institution. According to De Haan (1997), CBI refers to three areas in which the influence of government must be excluded or drastically curtailed: independence in personnel matters, financial independence and policy independence. Personnel independence relates to the appointment of key officers of the central bank, including the Governor and members of the Board, which ultimately determines who they are responsible to. By financial independence, it is meant that the monetary authority should not be influenced by the government to finance its spending directly or indirectly. Finally, policy independence connotes the freedom given to the central bank in the formulation and implementation of monetary policy.

The importance of CBI is well understood in the literature. It is a critical requirement for the maintenance of price stability. Generally, irrespective of the status of the central bank, it is often difficult to control government budgetary policies and; hence achieve the price stability objective. However, it is supposed that an independent central bank is in a better position to resist government attempt to monetize budget deficits. Altogether, it should be able to pressurize the government to exert more fiscal discipline. To Maxfield (1994), creditors see the independence of the monetary authority as an important factor that determines the likelihood that a nation's economic policy will promote the growth necessary for generating national income and the capacity to repay debts. An often cited reference case of an independent central bank is the German Bundesbank, which is highly regarded in the world, for its success in achieving price stability in Germany for many decades.

In the theoretical literature, the issue of central bank independence was given prominence by Rogoff's (1985) influential paper in which he considers some institutional responses to the time inconsistency problem. In the paper, Rogoff examines the practice of appointing a "conservative" to head the central bank. In doing so, the political authorities can protect themselves against destructive temptation to seek policies that would prove to be systematically too short-sighted for the common good (Orphanides, 2008). The emergence of empirical findings in the early 1990s, from studies such as Grilli, Masciandaro and Tabellini (1991), Alesina and Summers(1993), Cukierman, Webb and Neyapti (1992), Pollard (1993), suggesting that independence lowers inflation further strengthened the argument for greater autonomy of the central bank. Incidentally, the Decree that conferred some measure of autonomy on the CBN was enacted in 1991 and later ratified by the National Assembly in 1999.

To examine the degree of central bank independence, distinction is usually made between goal and instrument (operational) independence. If a monetary authority is able to determine the goals or objectives of monetary policy by itself, then it is said to have goal independence. On the other hand, if the goal is set by the government or the Parliament, while the central bank is free to use the instruments of monetary policy as it desires, then it has instrument or operational independence. But one should bear it in mind that even when the operational independence of the central bank is legally documented, in most countries with weak governance structures, the monetary authority finds it impracticable to implement monetary policies without government influence. Now, given this distinction, it is apparent therefore that, on paper, the CBN enjoys only operational independence as the monetary policy objectives have been clearly specified in the Act of the National Assembly that established it.

The CBN Act 1991, which institutionalized the independence of the central bank of Nigeria and the accompanying legislation, the Bank and other Financial Institutions Decree No. 25 of 1991, were also aimed at achieving three things: enhancing the CBN's capacity for monetary management, banking supervision, and enforcement of regulations necessary for a sound and prudent operations of the Bank. Thus, these Acts strengthened the power of the Bank as an agency of government for maintaining stability and a sound financial system in the country (CBN, 1992). A key feature of the 1991 Act that relates to financial independence is the reduction in the size of advances that the CBN may grant to the government in any year in respect of deficiency of budget revenue. On this, Section 32 of the Act specifies that any such advances shall be at the rate of interest as may be determined by the Bank. In addition, the outstanding amount shall not at any time exceed 12.5% of the estimated recurrent budget revenue of the Federal Government for the year in which the advances are granted. Also, all the advances shall be repaid at the end of the financial year in which they are granted failing which the bank shall exercise power to grant no further advances, until the outstanding balances have been repaid. However, the 2007 Act altered these provisions stipulating that the total amount of outstanding advances should not exceed 5% of the previous year's actual government revenue.

Although the powers of the CBN with respect to monetary management increased over the years since 1991, it appeared not to have been capable of inducing an improved fiscal behaviour, especially in the early years of operational autonomy. To see this, consider Figure 9, which shows government fiscal behaviour using two measures, current fiscal balance and overall fiscal balance in relation to GDP, for 1980 - 2008. Current fiscal balance represents the difference between government's current revenue

and its current expenditure, while the overall fiscal balance is the difference between government total revenue and its total expenditure. As the Figure reveals, the current fiscal measure seems lower, on the average before 1991 than between 1991 and 1999, except in1980 when it stood at 16.5% of the GDP. Specifically, between 1991 and 1999, the current fiscal balance was as high as 9.45% of GDP, although it stood as low as 0.04% in 1992. On the other hand, the overall fiscal balance has consistently been in the negative except on few occasions. It indicates that the government tended to spend more than it generates and had been borrowing to finance the gap.

Figure 2.10 shows the CBN financing of government fiscal deficits in relation to the requirements of the 1991 Act, for the period 1991 - 2007. It shows that between 1991 and 1994, CBN financing of fiscal deficit exceeded the 12.5% estimated government revenue required by law. This was also the situation in 1998. However, from 1999 the situation changed as financing of deficit appeared to have ceased effectively. In particular, records from the CBN indicate there was no deficit financing in 1999 and for three years consecutively, from 2004 to 2006, while the amount stood at ₦94m and ₦158.9m in 2003 and 2007, respectively. This remarkable development is probably due to further strengthening of the Bank's autonomy in 1998 and the subsequent creation of the Debt Management Office in year 2000, which relieved the CBN of its debt management functions.

Fig 2.9:   Nigeria's Fisal Deficit Behaviour, 1980 – 2008
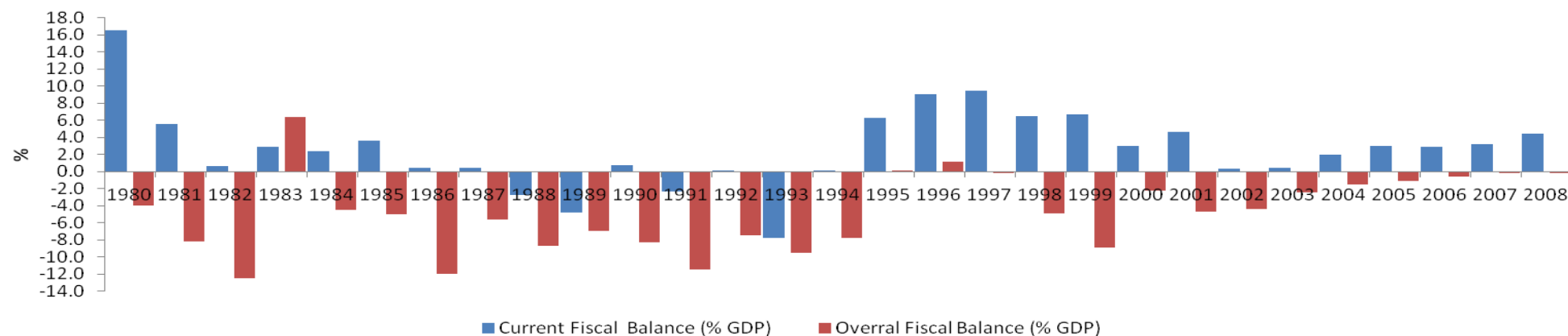
Fig 2.10: Periods of Financial Independence of the Central Bank of Nigeria, 1991 – 2007
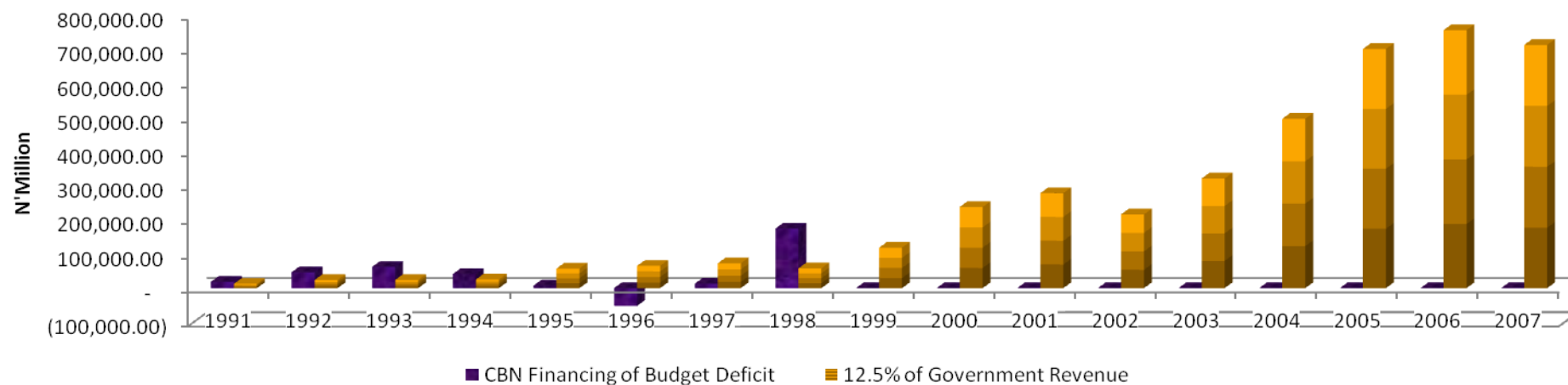
Source: Author using data from the CBN Statistical Bulletin, 50 Years Special
Anniversary Edition, 2008; and Annual Report, 2009

On the extent of personnel independence, it is necessary to examine the membership and appointment of the Board Members of the CBN. Again, according to the 1991 Act, the Board consisted of the Governor, four Deputy Governors, the Permanent Secretary of the FMF, and five Directors. The Governor and the Deputy Governors should be persons of recognized financial experience and would be appointed by the President on such terms as may be set out in their respective letters of appointment. Similarly, the appointment of the five Directors should be done by the President, while the Permanent Secretary of the FMF, of course is a government representative on the Board. To the extent that all Board members are appointees of the President, then it can be seen that the 1991 Act failed to grant personnel independence to the CBN. To worsen the situation, an amendment to the Act in 1997 altered the composition of the Board by providing for the appointment of a part-time Chairman. However, in another regulatory development, the amendment decree No. 37 of 1998 reinstated the Governor as the Board Chairman. Yet again, the CBN decree No. 41 of 1999, while restoring the administrative autonomy of the Bank over its internal affairs, also empowered the Board to approve the annual budget of the bank (CBN, 2000). It also gave it power to make and alter rules and regulations for the good order and management of the bank, hence, finally affirming its autonomy (CBN, 2009). In line with the new amendments, the Board was reconstituted in December, 1999, comprising the Governor as the Chairman, four Deputy Governors and six part-time directors, including the Permanent Secretary, FMF.

While the 1991 Act is widely regarded as a historic legislation in Nigeria, there were subsequent developments in both the domestic and international scenes that

necessitated a reconsideration of its provisions. First, the responsibilities of the CBN in terms of regulation and supervision expanded far more than anticipated. Second, the commencement of universal banking business in 2001 meant that commercial banks became one-stop-shops for many types of financial services. Also, since 1999, there have been a wide range of economic and financial reforms. The Act was therefore re-enacted in 2007 instead of the usual amendments, to accommodate these developments and also to bring it up to international standard. There are two notable features in the new Act that affect the personnel independence of the CBN. First, the Accountant-General of the Federation became a Board member bringing the membership size to twelve, and hence the number of government representatives on the Board to two. The second point is that, the appointment of the Governor, the Deputies Governors and the five external Directors still by the President, but now subject to confirmation by the Senate. It is further required that, in appointing the Directors, the President should have consideration for a fair representation of the financial, agricultural, industrial, and commercial interest and the principle of federal character. The Directors should have experience in any of economics, law, public administration, business administration, accounting, banking and Finance. In addition, the removal of the Governor shall be supported by 2/3 majority of the Senate.

Furthermore, by the 1991 Act, the Governor was required to regularly inform the President of the Affairs of the Bank, and also tender a formal report every six months to then Provisional Ruling Council. In 1997, this reporting channel was altered to the effect that all submissions to the President were to pass through the Honourable Minister of Finance. But, in 1998 the regulation was reversed as the Governor was then required to report directly to the President and the National Assembly on its affairs

rather than through the Minister. According to the 2007 Act, the Governor is now mandated to appear before the National Assembly at semi-annual hearings in respect of the efforts, activities, objectives and plans of the Board on monetary policy issues. The hearings should also cover economic developments and future prospects. Finally, the Governor should present a report on its activities and the performance of the economy to the relevant Committees of the National Assembly.

2.12 FISCAL VERSUS MONETARY POLICY DOMINANCE IN NIGERIA

There is a debate about which of fiscal or monetary policy that ultimately determines the price level. Early thinking, which is attributed to Milton Friedman, posits that inflation is always and everywhere a monetary phenomenon. However, this conventional line of thought has been questioned by an emerging theory, the Fiscal Theory of the Price Level (FTPL). In sum, this theory suggests that it is the monetary authority that must adjust its policy stance because the fiscal authority is dominant most of the time. According to Sargent and Wallace (1982), monetary dominance is said to occur when the monetary authority independently sets monetary policy, and hence determines the amount of revenue it will supply the fiscal authority through seignorage. It may do this by announcing the time path for growth rates of base money. In the event of this, the fiscal authority faces the constraint imposed by the demand for public debt. Since the government must satisfy its intertemporal budget constraint, any deficit has to be financed by a combination of seignorage and bond issue to the public. Thus, under this extreme monetarist economy, the monetary authority is able to permanently control inflation in so far as it is free to choose the path for base money. On the other hand, fiscal dominance exists when fiscal policy is set exogenously to monetary policy in an environment where there is limit to the

amount of government debt that can be held by the public (Oyejide, 2003). To Canzoneri, Cumby and Diba (2001), fiscal dominance also known as the Non-Ricardian Regime, occurs when primary surpluses evolve independently of government debt, so that equilibrium price jumps to ensure fiscal solvency. Here, in reverse, the monetary authority now faces the constraint imposed by the demand for public debt; hence it becomes less powerful in controlling inflation because any shortfall in government revenue must be financed by money creation. Under this regime, fiscal policy becomes too strong such that macroeconomic variables tend to react significantly to changes in fiscal policy. Indeed, for an economy in which the financial market is small relative to the size of fiscal deficits, the best the monetary authority can do is to play an accommodative role.

The link between government deficit and the source of its financing, and hence the relationship between the fiscal and monetary authority as illustrated by Laurens and De la Piedra (1998) is expressed as:

$$D(t) = \{B(t) - B(t-1) + \{M(t) - M(t-1)\},$$

where D(t) is government budget deficit, B(t) - B(t-1) is net placement of government bond, foreign or domestic, and {M(t) - M(t-1)} represents change in the monetary base. Without policy coordination between both authorities, three things can happen:

✓ The monetary authority can become dominant, and hence determine the changes in the monetary base independent of the financing need of the government. In which case, the government budget deficit would be

constrained by the limit imposed by foreign and domestic financial bond
markets;

✓ The fiscal authority can become dominant. When this happens, it determines
the size of the budget deficit disregarding whatever the monetary authority is
doing. In an economy in which the bond market is less well developed, the
monetary authority would not have a choice but to supply any amount of
money to finance government budget deficit in the form of direct lending to
the government; and

✓ Both can behave as if they are dominant, and hence independent. Here, there is
the tendency that their choices about the growth rate of money and size of
the budget deficit would differ.

In the Nigerian context, it is generally agreed that the fiscal authority has been
dominant given the challenge it has posed to monetary management. To confirm this,
two indicators, namely, shares of domestic public debt in both the GDP and the Total
Assets of the Banking System are used as rough guides to possibly give some idea on
how severe this issue has been. Fiscal dominance would likely pose a serious problem
when the size of the banking system is small relative to the volume of public debt.
Given the relative small size of the banking system, an increasing exposure to
sovereign debt can cause a banking crisis if the government is considered incapable of
repaying its debt.

Figure 2.11 presents the behaviour of these indicators for the period 1980 –
2008, apparently, revealing that the public domestic debt has far exceeded the total
asset of the banking system over the years. It started declining meaningfully in year

2000 reaching the lowest level in 2008 when it stood at 25.31%. Specifically, between 1982 and 1993, the total domestic public debt was twice as large as the total banking system assets, indicating that the banking system in general has been obliged for the greater part of the period to rather hold a substantial share of domestic public debt, and therefore reveals evidence of fiscal dominance. It must be mentioned that the threat of fiscal dominance has diminished remarkably, as the indicator fell rapidly from 86.7% in 2000 to a very low level in 2008, which could be attributed to the removal of the debt management function from the Central Bank following the creation of the DMO.

The domestic public debt/GDP ratio seems to have mirrored the movement in the domestic public debt/total assets of the banking system. A rising domestic public debt/GDP ratio is another indicator that the government is proving far much stronger than the monetary authority in macroeconomic management. In other words, the monetary authority is unable to limit the capacity of the government to finance its activities through borrowing. This indicator rose from 18.2% in 1980 to an all time high of 41.1% in 1984, before declining to 21.7%. Then, it started rising again but in moderate fashion until 1996 when it stood at 12.7%. In 2008, the indicator was 8.4%, the lowest for many years.

Table 2.6: Holding of Federal Government Domestic Debt Outstanding, 1975 - 2007 (N' Million)

Year	CBN	Commercial Banks	Merchant Banks	Total Banking System	% of Banking System Holding	Non-Bank Public	Total
1975	4.0	728.0	13.4	745.4	44.5	930.1	1,675.5
1976	59.9	1,054.7	27.5	1,142.1	43.5	1,484.8	2,626.9
1977	240.6	1,153.8	63.3	1,457.7	42.8	1,949.0	3,406.7
1978	1,204.3	952.6	25.9	2,182.8	45.3	2,630.9	4,813.7
1979	1,109.9	2,144.0	60.6	3,314.5	45.9	3,899.5	7,214.0
1980	1,592.4	2,434.8	67.6	4,094.8	49.8	4,120.8	8,215.6

1981	4,523.6	1,773.9	69.4	6,366.9	56.9	4,825.7	11,192.6
1982	6,488.9	2,818.6	174.7	9,482.2	63.2	5,525.4	15,007.6
1983	10,402.2	5,140.4	385.5	15,928.1	71.7	6,293.3	22,221.4
1984	9,531.7	8,726.1	894.0	19,151.8	74.6	6,520.3	25,672.1
1985	9,905.5	10,254.9	1,133.9	21,294.3	76.2	6,654.8	27,949.1
1986	16,103.3	4,422.0	148.2	20,673.5	72.7	7,765.2	28,438.7
1987	17,646.9	7,572.7	285.4	25,505.0	69.3	11,284.1	36,789.1
1988	26,636.0	7,309.6	167.9	34,113.5	72.5	12,916.1	47,029.6
1989	15,647.7	3,614.0	84.6	19,346.3	41.1	27,703.3	47,049.6
1990	27,380.8	8,702.4	362.1	36,445.3	43.3	47,647.8	84,093.1
1991	62,294.3	6,813.5	673.0	69,780.8	60.1	46,417.9	116,198.7
1992	138,769.6	5,535.1	693.3	144,998.0	81.5	32,963.7	177,961.7
1993	202,434.7	29,535.4	9,344.0	241,314.1	88.1	32,522.3	273,836.4
1994	308,440.8	38,901.1	8,371.0	355,712.9	87.3	51,869.8	407,582.7
1995	414,285.9	20,539.8	1,755.8	436,581.5	91.4	41,152.4	477,733.9
1996	312,804.3	47,243.3	8,821.9	368,869.5	87.8	51,106.1	419,975.6
1997	403,301.5	39,402.2	5,697.9	448,401.6	89.4	53,349.5	501,751.1
1998	454,910.5	48,795.3	8,879.7	512,585.5	91.4	48,244.7	560,830.2
1999	530,420.8	188,165.5	13,325.3	731,911.6	92.1	62,895.0	794,806.6
2000	511,445.8	277,345.7	14,711.1	803,502.6	89.5	94,751.3	898,253.9
2001	738,585.4	202,966.2	-	941,551.6	92.6	75,422.4	1,016,974.0
2002	532,453.2	461,357.0	-	993,810.2	85.2	172,190.5	1,166,000.7
2003	592,590.0	371,370.4	-	963,604.5	76.7	293.515.5	1,257,120.0
2004	441,590.0	605,185.1	-	1,046,775.1	80.7	250,990.1	1,297,765.2
2005	188,298.9	613,285.2	-	801,584.1	62.9	473,492.5	1,275,076.6
2006	652,493.1	972,689.1	-	1,625,182.2	78.1	456,825.1	2,082,007.3
2007	97,038.5	1,958,335.89	-	2,055,374.4	69.9	886,439.1	2,941,813.5

Table 2.6 shows the holding of Federal Government Domestic Debt, from 1975–2007, by the banking system and the non-bank public, while Figure 2.12 serves to further illustrate the situation. The banking system is made up of the CBN, Commercial Banks and Merchant banks, of course before the adoption of universal banking model. On the other hand, the non-bank public consists of Discount Houses, Government Parastatals, Insurance Companies, Brokers/Dealers, Pension Funds, etc. Again, in general terms, the Figure reveals that the proportion of total debt held by the Banking system, has been quite high compared to holdings by the non-bank public. In particular, the banking system's proportion was lowest in 1981 with 41.1% of the total domestic public debt, whereas it attained the highest proportion of 92.6% in

2001. It is also clear from the Figure that between 1982 and 2002, this indicator was consistently above 80%. The non-bank sector holding was only higher than that of the banking system in 1989 and 1990, when it consisted of 58.9% and 56.7% of the total domestic debt. This confirms what is already known: the government tends to dominate the monetary authority in Nigeria's macroeconomic arena.

In addition, Figure 2.13 illustrates the major deficit financing sources in Nigeria over the course of the sample period using data from the CBN. It confirms that deficit financing by the banking system, and hence the CBN has been high. On the other hand, the non-bank source seemed to be low in relation to the others, obviously because of the shallow debt of the domestic market, which limited the capacity of the government to finance deficit through the issue of bonds to the public. But, from 1999 this source of financing started rising as financing by the bank ceased.

Fig 2.11: Trends in the Indicators of Fiscal Dominance, 1980 - 2008

Domestic Public Debt/GDP (%) Domestic Public Debt/ Total Assets of the Banking System (%)
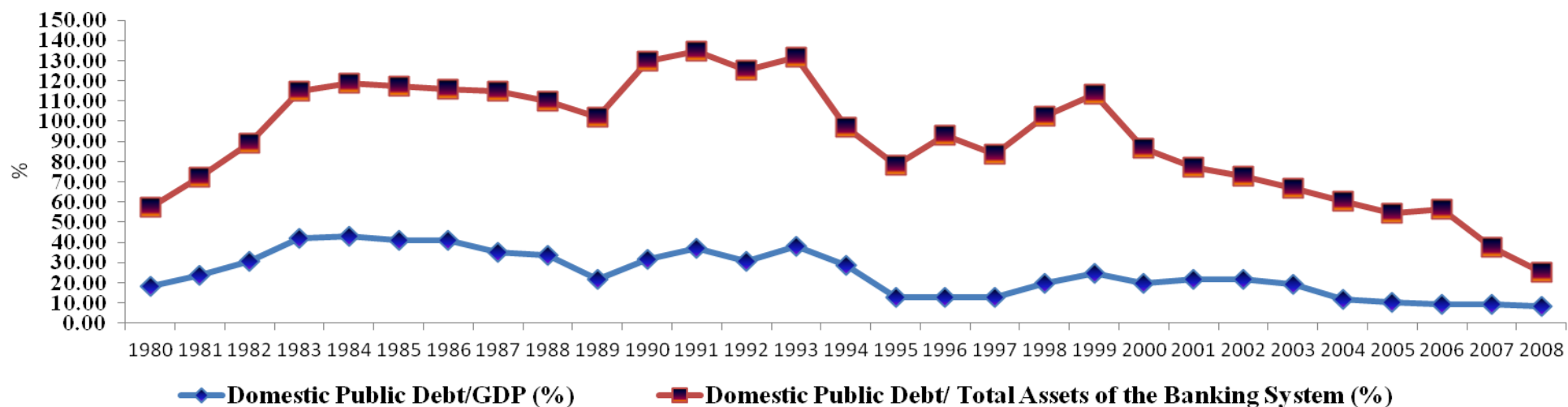
Fig 2.12: Holding of Federal Government Debt Outstanding, 1980 - 2007
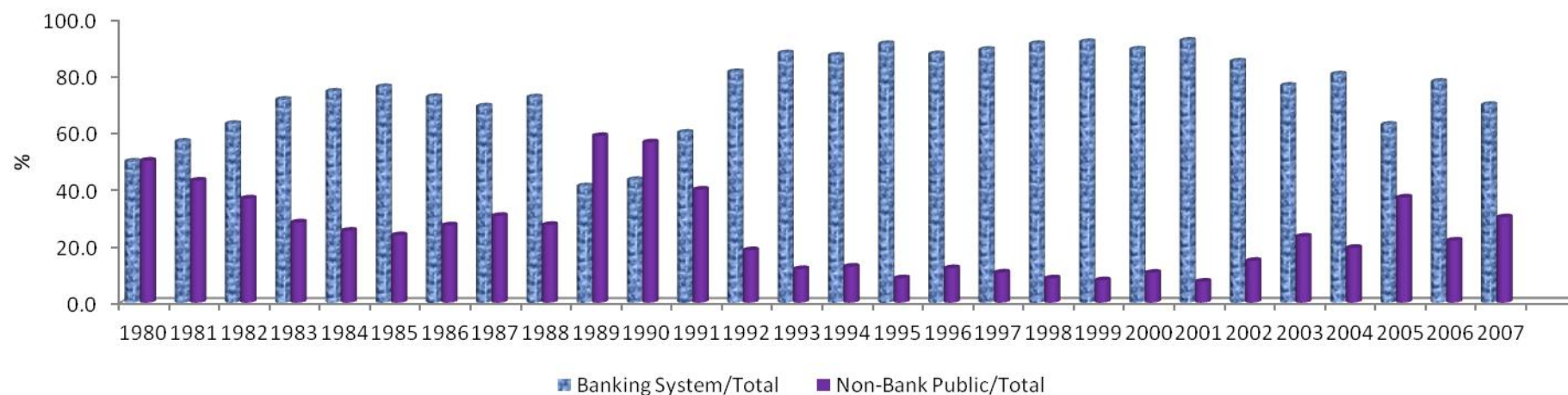
Banking System/Total Non-Bank Public/Total

Source: Author using data from the CBN Statistical Bulletin, 50 Years Special
Anniversary Edition, 2008, and Annual Report, 2009

Fig 2.13: Deficit Financing in Nigeria, 1980 - 2008

Legend: ◆ % of Banking System Financing ■ % of CBN Financing ▲ % of Non-bank public Financing ✕ % Dometic Financing
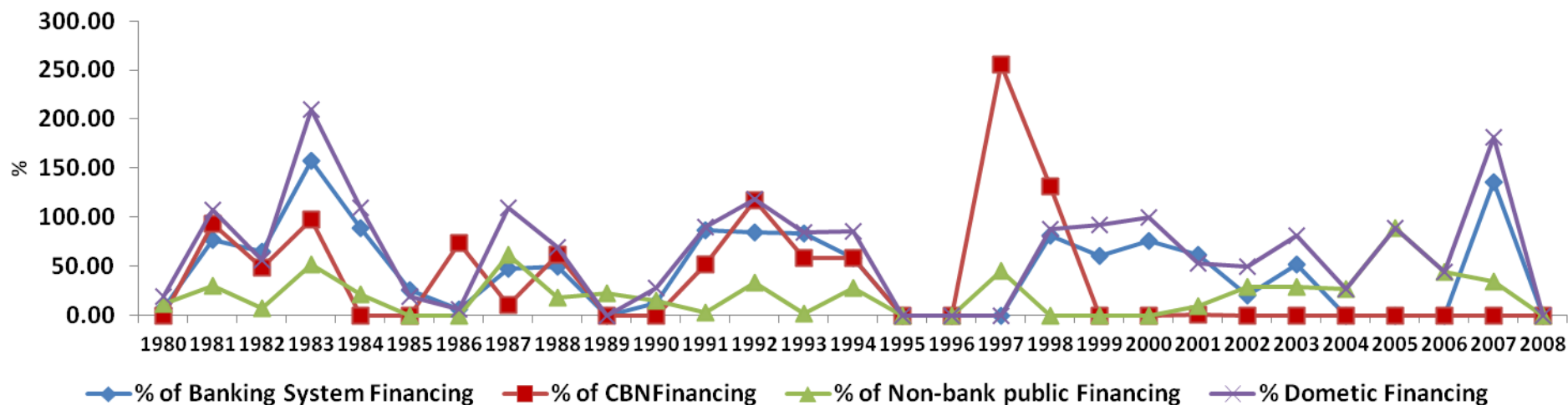
Fig 2.14: Indicators of the Stance of Fiscal and Monetary Policies in Nigeria, 1980 - 2008

Legend: ◆ Govt Expenditure (% GDP) ■ Real Interest Rate ▲ Overral Balance (% GDP) ✕

Source: Author using data from the CBN Statistical Bulletin, 50 Years Special Anniversary Edition, 2008, and Annual Report, 2009

2.13 FISCAL AND MONETARY POLICY STANCE IN NIGERIA

The stance of policy generally gives indication of the desired direction that the policymaker wishes to take the economy. Simply, it shows whether a policy is loose or tight. To examine the stance of fiscal policy, the conventional practice is to analyse the behaviour of government fiscal balance as a percentage of nominal GDP. For this purpose, three indicators including the primary fiscal balance, overall fiscal balance and structural balance are used. Other measures used to assess fiscal stance are current fiscal balance, the domestic fiscal balance, and the operational fiscal balance. It may also be useful to examine the growth in government expenditure in relation to the GDP over time. Usually, larger fiscal balances point to a loose fiscal policy, while smaller balances suggest a contractionary or tight posture. In terms of sign, positive fiscal balances indicate fiscal tightening, while negative values show loosening. .

In the context of monetary policy, one can examine changes in reserve money or the real rate of interest for policy direction. Here, real interest rate is defined as nominal interest rate adjusted for actual inflation. The nominal interest rate applied is the Minimum Rediscount Rate (MRR), which generally guides the direction of other market interest rates in Nigeria. Adopting the movement in real interest rate as a crude indicator, positive values reflect tight monetary policy, whereas negative values show loose monetary policy. In particular, negative values can be due to very high inflation even when nominal rates are high. It may be important to make the following comments concerning the nature of the data used to analyze monetary stance:

- ✓ The MRR, now known as the MPR, is administered by the CBN;
- ✓ Thus, it may not rise and fall as fast as the inflation rate;

✓ For a number of periods, the MRR was relatively constant. To be exact, the MRR was unchanged during the following periods: 1982 – 1983, 1984 –1986, 1987 –1988, 1989 –1990, and 1994 –1997;

✓ Also, the country has had its fair share of episodes of high inflation in relative terms. In this regard, inflation is considered as high when it exceeds 20%;

✓ Thus, the following periods may be characterized as high inflation episodes: 1983 – 1984, 1988 – 1989, and 1992 – 1996; and

✓ As a consequence, real interest rates would tend to be negative and high during periods of high and rising inflation;

✓ Indeed, based on the author's calculations, the real interest rate was noticeably high between 1992 and 1995, with the highest of -59.3% in 1995 during which the inflation rate stood at an all time high of 72.8%.

In connection with the foregoing, Figure 14 illustrates the direction of fiscal and monetary policy in Nigeria over the sample period, using indicators including the public expenditure/GDP ratio, real interest rate, and overall fiscal balance. Table 9 further highlights the specific stance of monetary and fiscal policies over the period adopting the real interest rate and overall fiscal balance as policy measures. In this process, the periods of coordination and non-coordination are also easily revealed. Using the real interest rate as a measure, it can be seen from the Table 2.7 and Figure 2.14 that monetary policy has been evenly restrictive and expansionary. Specifically, the monetary policy stance was tight in 14 years: 1982, 1985–1987, 1990–1991, 1997–2000, 2002–2003 and 2006–2007. It was loose in the following 14 years: 1980 – 1981, 1983–1984, 1988–1989, 1992–1996, 2001, 2005 and 2008. But in 2004 monetary policy was neutral in the sense that the real

interest rate was zero because the nominal interest rate was the same as the actual rate of inflation. This preliminary finding seems inconsistent with the Bank's regular attempt to fight inflation arising from monetary expansion. But, one must exercise caution in interpreting these results as they are only rough estimates.

Examining government expenditure/GDP ratio reveals clearly that fiscal policy has been largely expansionary. It stood at 33% in 1980, averaged about 21% between 1982 and 1998, and then peaked at 25% in 1999, before declining steadily to 13% in 2008. The behaviour of overall balance as a percentage of GDP, which has been predominantly negative, also indicates government's loose fiscal posture. Negative overall fiscal balance shows that the government spends more revenue than is generated. Figure 2.9 reveals that both indicators were as high as 15.5% and 11.5%, respectively in 1980. But, since 1999 they have come down remarkably well, particularly the overall fiscal balance, which has not exceeded 1.5% of GDP since 2004. Indeed, overall fiscal balance stood at 0.2% in 2008, while current fiscal balance was 4.47%. Furthermore, Table 2.6 specifies the actual fiscal policy stance confirming that fiscal policy has been loose over the course of the sample period, excepting in1995 and 1996.

Table 2.7: Monetary and Fiscal Stance, 1980 – 2009

Year	Monetary Policy		Fiscal Policy		Coordination
	Tight	Loose	Tight	Loose	
1980	X	✓	X	✓	✓
1981	X	✓	X	✓	✓
1982	✓	X	X	✓	X
1983	X	✓	X	✓	X
1984	X	✓	X	✓	✓
1985	✓	X	X	✓	✓

1986	✓	X	X	✓	X
1987	✓	X	X	✓	X
1988	X	✓	X	✓	✓
1989	X	✓	X	✓	✓
1990	✓	X	X	✓	X
1991	✓	X	X	✓	X
1992	X	✓	X	✓	✓
1993	X	✓	X	✓	✓
1994	X	✓	X	✓	✓
1995	X	✓	✓	X	X
1996	X	✓	✓	X	X
1997	✓	X	X	✓	X
1998	✓	X	X	✓	X
1999	✓	X	X	✓	X
2000	✓	X	X	✓	X
2001	X	✓	X	✓	✓
2002	✓	X	X	✓	X
2003	✓	X	X	✓	X
2004	-	-	X	✓	X
2005	X	✓	X	✓	✓
2006	✓	X	X	✓	X
2007	✓	X	X	✓	X
2008	X	✓	X	✓	✓
2009	X	✓	X	✓	✓

✓ **Indicates 'Yes', X indicates 'No', - indicates neutral.**

Real interest rate and overall fiscal balance are used as measures of monetary and fiscal stance, respectively.

Source: Author's calculation

Additionally, the stance of both monetary and fiscal policy can give insight into whether both policies are coordinated or not. In this context, coordination is said to occur when both policies are consistent in addressing a particular economic problem. In which case, for policy coordination to exist in a particular year, monetary and fiscal policy should simultaneously display loosening or tightening. Any situation outside these two connotes non-coordination. In this wise, to establish the consistency of both policies or otherwise, the symbol, √, in the Table 2.7 indicates periods of policy tightening or loosening, while X indicates of absence of tightening or loosening.

Now, examining the Table for possible coincidence of monetary and fiscal stance, and hence coordination, it shows that monetary and fiscal policies were coordinated for 13 years, namely, 1980–981, 1984–1985, 1988–1989, 1992–1994, 2001, 2005, 2008 and 2009. In contrast, lack of coordination characterized the following 17 years: 1986–1987, 1990–1991, 1995–2000, 2002–2004, and 2006–2007. By this rough measure, periods of non-coordination dominated periods of coordination. Elsewhere, Arby and Hanif (2010) finds that in Pakistan the situation was worse. Policy coordination was observed in 12 years out of 44. Even the establishment of the Monetary and Fiscal Policy Coordination Board through the amendment of the central bank Act in 1994 did not improve the situation.

2.14   CAPITAL MARKET DEVELOPMENTS

The capital or stock market is part of the broader financial market for raising funds on long term basis for the purpose of financing productive business activities. It comprises two segments: the primary or new issues market in which fresh funds are raised and the secondary market in which already existing stocks and securities are traded. As noted earlier, a well developed domestic stock market is important for both the fiscal and the monetary authority,

and thus a critical element of effective policy coordination. Indeed, where the financial market in general is advanced, it can be relied upon to coordinate monetary and fiscal policies, although with varying degrees of synchronization through a market driven process of adjustment via the interest rate, exchange rates and forward premiums (Worrell, 2000). As experienced in Nigeria, and many other developing countries, market-based monetary instruments are only workable and effective in a well developed capital market.

2.14.1 **Indicators of Capital Market Development**

To determine the extent of the development of the market, it is important to examine a number of indicators that generally summarize the level of activity. The first of the indicators is the Stock Market All Share Index to which Figure 2.15 relates. This index captures general movements in share prices. In 1985, when the computation of the index began, it stood at 127.3% and remained flat until 1991. Lower stock prices during the period reflected economic recession, and the uncertain outlook about the performance of the banking sector following the withdrawal of government deposits from commercial banks by the CBN (CBN 1984, 1990). However, from then, the index showed a continuous upward trend reaching 6,992.1% in 1996, reflecting the appreciation of the prices of highly capitalized stocks due essentially to improved profit performance.
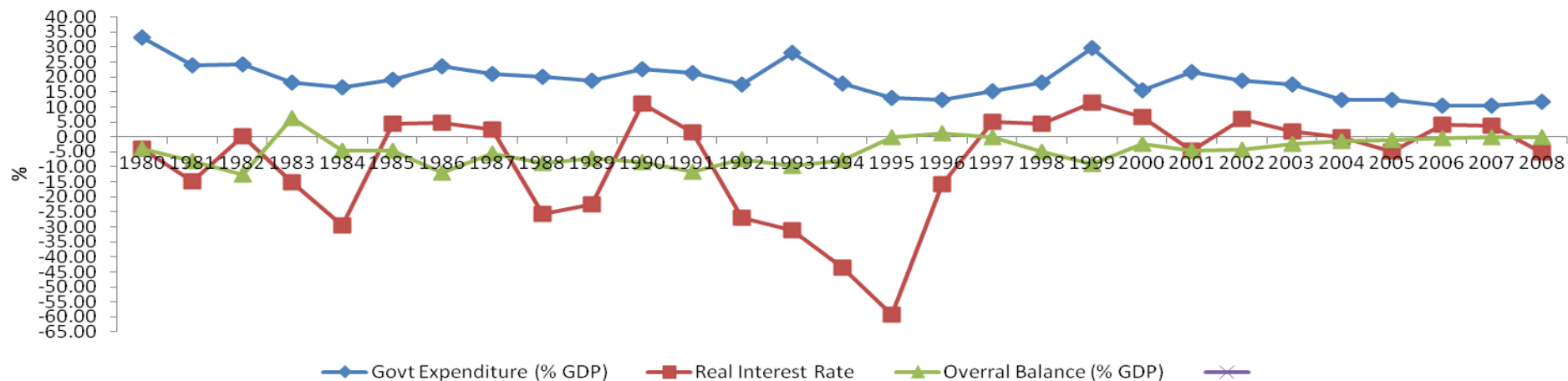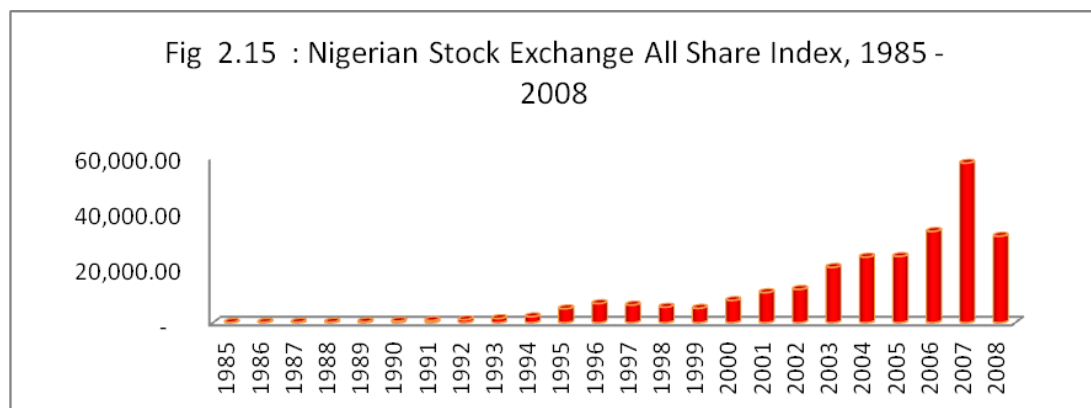

Source: Author using data from the CBN Statistical Bulletin, 50 Years Special
Anniversary Edition, 2008, and Annual Report, 2009.

The market capitalization is probably the most important indicator of stock market development. It is the product of the volume of all the securities listed on the exchange, including government securities, debt and equities and their prices at any given time. Indeed, this indicator in absolute terms reflects the size of the stock market and is a basis for comparison with stock markets in other countries. In relation to the GDP, it further indicates the extent to which the market is growing as the economy advances. Market capitalization may rise when there are new issues of the following types: initial public offering (IPO), rights issue, supplementary issue, and bond issue. Bonus issues of highly capitalized listed companies are also quite capable of lifting the entire capitalization of the market.

Figure 2.16 illustrates the trend in stock market capitalization, from 1981 to 2008. Total market capitalization stood at about ₦5.0billion in 1981 with a yearly average of ₦5.3billion between then and 1987. The market picked up gradually with a capitalization of ₦10b in 1988 rising to ₦66billion in 1994. In 1995, the NSE recorded a jump of 71.5% with a market capitalization of ₦180.4billion. From that time, this indicator exhibited a continuous upturn attaining the one trillion mark in 2003. In 2007, it rose by 276.3% from the 2006 level to arrive at an all time high value of ₦13.2trilion before the market imploded in 2008 to about ₦10 trillion following the global financial crisis.
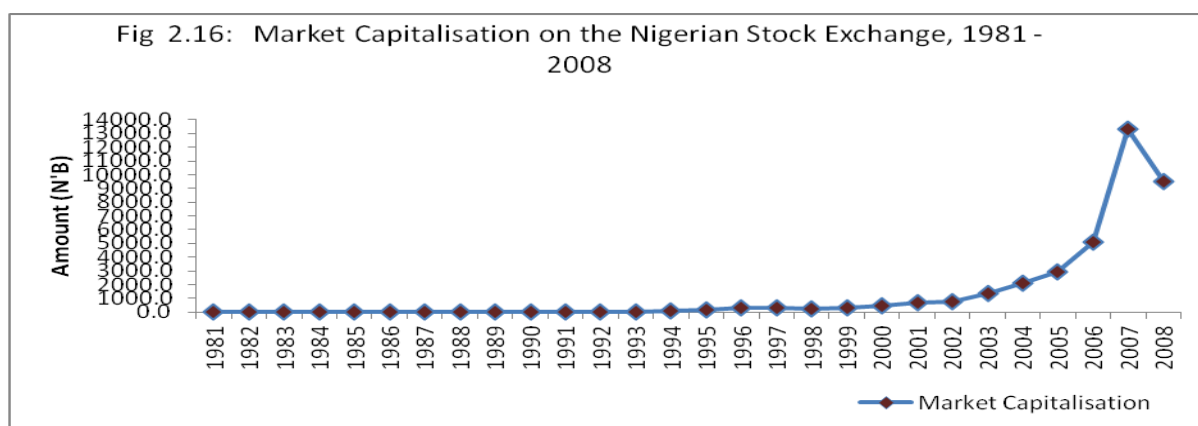
Fig 2.16: Market Capitalisation on the Nigerian Stock Exchange, 1981 - 2008

Source: Author using data from the CBN Statistical Bulletin, 50 Years Special Anniversary Edition, 2008, and Annual Report, 2009.

Two additional indicators of the level of stock market activity considered are the number and value of transactions. In this regard, Figure 2.17 illustrates the behaviour of these measures for the period 1980 - 2008. As the Figure reveals, both indicators moved up and down together gradually between 1980 and 1998 with the transaction value staying a little ahead. Then, between 1999 and 2005, the market appeared to have come alive, while there was a surge in activities from 2006 to 2008. Several factors accounted for this observed behavioral pattern. For example, in 1982, the market was characterized by a decline in activities both in the number of transactions and the value following the economic recession and the suspension of active trading in government stocks between May and July when the new pricing policy of stocks was being formulated (CBN, 1983). In 1983, trading improved as investors, who faced liquidity problems unloaded shares into the market. Similarly, in 1986 when bank lending became restrictive, many investors divested from the market to secure cash needed for personal and business needs. Also, the privatization programme and increased lending rates boosted activities in the market in 1989.
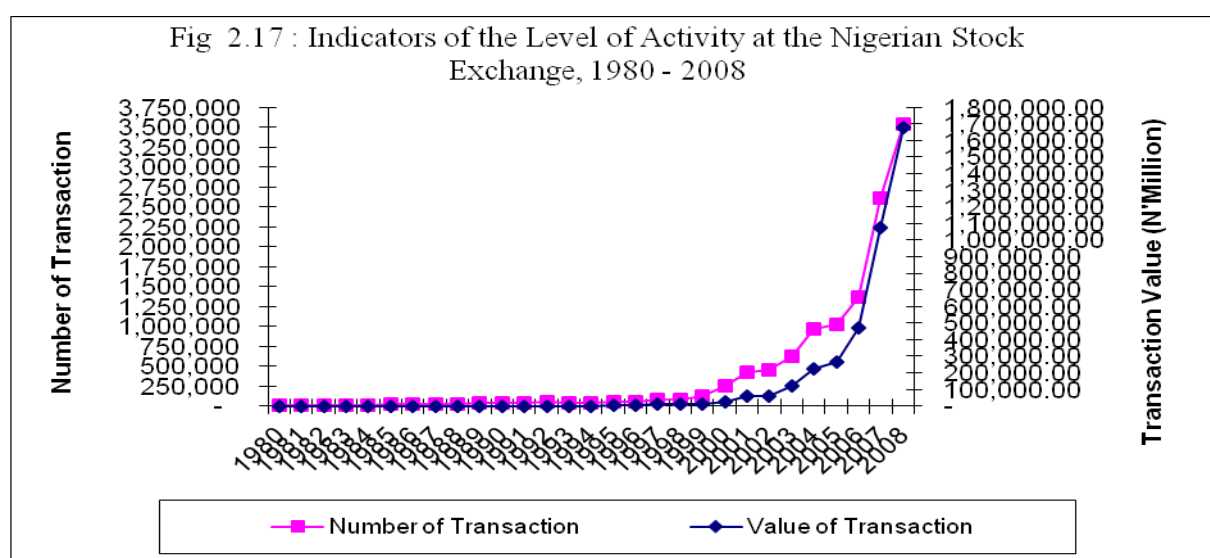
Fig 2.17 : Indicators of the Level of Activity at the Nigerian Stock Exchange, 1980 - 2008

Source: Author using data from the CBN Statistical Bulletin, 50 Years Special Anniversary Edition, 2008, and Annual Report 2009

Activities in the primary market also indicate the level of development in the capital market. In this respect, improved activities signify increased recourse to the stock market by investors, including the government. The introduction of the Second Tier Securities Market in 1995 and the Third Tier Market in 2007 by the NSE are major attempts to attract new issues and further deepen the market. Over the years, the Federal Government and a number of State Governments have availed themselves of the primary market facilities to raise funds for financing a variety of development projects. In particular, the Federal Government issued development stocks in the distant past to specifically finance its National Development Plans. Nowadays, Federal Government bond issues in the domestic capital market are aimed at the following (see DMO, 2010):

- to finance government deficits in a non-inflationary and sustainable manner;

- to enhance fiscal discipline and for the management of monetary policies;

- to restructure the existing debt stock of short-term debt to longer term obligation

- to establish a benchmark yield curve, which acts as a reference for pricing other bonds issued by other bodies;

- to develop the domestic bond market on a sustainable basis, and

- to enhance and deepen savings and investment opportunities

2.14.3   DMOs' Development Activities in the Nigerian Bond Market

It is important to highlight the efforts of the Federal Government towards developing the bond market, particularly through the activities of the DMO in collaboration with the CBN. The DMO has been quite active in this regard in recent times. On behalf of the government, it has continued to restructure the domestic debt profile, develop the bond segment of the capital market, and promote overall economic growth of the economy. In particular, with the CBN acting as the issuing house and registrar, the DMO has

successfully floated Federal Government of Nigeria (FGN) Bonds, with varying tenors of 3, 5, 7, 10 and 20 years since 2005. The issues have continued to receive patronage from local investors including, discount houses, government parastatals, pension funds, and brokers, among others. Foreign investors are also noted to have shown keen interest in investing in the domestic bond market. The steady rise of the volume of Federal Government Bond in relation to the total domestic debt is indeed a reflection of government's attempt to restructure the domestic debt portfolio in favour of long term debt and hence deepen the market, as Table 2.8 shows.

Table 2.8: Composition of Federal Government Domestic Debt, 2005–2009

(₦'Billion)

Instrument	2005	2006	2007	2008	2009
FGN Bonds	250.83	643.94	1,186.16	1,445.60	1,974.93
Nigerian Treasury Bills (NTBs)	854.83	695.00	574.92	471.93	797.48
Treasury Bonds	419.27	413.60	407.93	402.26	392.07
Development Stocks	0.98	0.72	0.62	0.52	0.52
Promissory Notes	0.00	0.00	0.00	0.00	63.03
Total	1,525.91	1,753.26	2,169.63	2,320.31	3,228.0

Source: Debt Management Office, Annual Report and Statement of Accounts, 2009.

The DMO's main strategy for the development of Nigeria's bond market has a medium term outlook with an annual securities issuance work plan. In particular, the institution established the Primary Dealer Market Maker (PDMM) system in 2006 to facilitate the emergence of a liquid and vibrant secondary market for government securities. According to the DMO (2009), the introduction of the PDMM system is intended to enhance the ability of the institution to achieve efficient funding of the debt of the Federal Government through the development of strong primary and secondary markets. As approved authorized dealers, the PDDM, which may include banks, insurance companies and broker-dealers, has the responsibility of taking up, marketing and distributing the primary issuance of Federal Government Securities by making two-way quotes in all market conditions, in

addition to enhancing secondary market trading activities. Since the system was introduced, there has been a steady rise in public subscription and strong foreign investor participation in Federal Government bonds auctions (DMO, 2008). Importantly, the institution's current Bond Issuance Programme, 2008-2012, is aimed at providing low cost funding for the government, and developing the market for long-term debt instruments, and thus creating a benchmark yield curve for other financial instruments in Nigeria.

CHAPTER THREE

LITERATURE REVIEW

3.1   INTRODUCTION

The literature review is in three parts, namely, theoretical, empirical and methodological literature. The first part concerns theoretical developments and issues on macroeconomic stabilization, with emphasis on policy mix in both a closed and an open economy. In the review of empirical evidence on policy coordination, though interest would be on evidence relating to the theme of this study, additional insights would be provided from the review of related studies on policy coordination in the European Monetary Union and international interdependence between countries. The methodological review considers the alternative approaches adopted in the literature to analyze the policy coordination problem.

3.2   THEORETICAL LITERATURE

3.2.1   The Choice of Policy Mix in a Closed Economy

Much of the debate in the macroeconomic stabilization literature has centred on the relative importance of fiscal and monetary policies. In a closed economy, both policies have significant impact on output generally, although they differ in their impact on the components of aggregate demand. Monetary policy operates by stimulating interest rate responsive components of aggregate demand, while the impact of fiscal policy depends on the composition of government spending (Dornbusch, Fischer and Startz, 2008).   In the presence of the liquidity trap phenomenon, characterized by a very low level of interest rate, theory has shown that fiscal policy is most effective. Here, the greatest amount of output expansion can in fact be achieved. Monetary policy would be impotent because an increase in money supply would simply disappear into speculative hoards leaving interest rate

unaffected. On the other hand, at the extreme classical case, in which the Liquidity Money (LM) curve is vertical, monetary policy has the greatest impact on output. Monetary expansion would reduce interest rate and thus stimulate investment activities, whereas fiscal policy tools would generally be ineffective.

Apart from these extreme situations of liquidity trap and vertical LM curve, which in reality may not occur, real life experiences have shown that economic conditions are a bit more complicated. For example, suppose an economy is suffering from what has been termed "stagflation" in the literature, meaning joint occurrence of recession and inflation. Then, what is the appropriate policy that would be applied to raise output, and thus move the economy away from the recession and at the same time reduce inflation? Without doubt, fiscal policy or monetary policy alone may not solve this problem. Typically, this is the kind of problem that some countries have had to contend with and has shaped the thinking about how stabilization policy should be conducted. In this example, expansionary fiscal policy for sure would raise output, but further worsening the inflation situation, while a restrictive monetary policy targeted at dealing with the inflation problem will end up prolonging the recession. It has thus been suggested that a combination or mix of fiscal and monetary policy may address this twin problem.

Policy mix refers to the contemporaneous joint state of monetary and fiscal policy. It is an important ingredient in the business cycle (Brimmer and Sinai, 1986). There are four possible alternatives, namely, loose fiscal - easy money, loose fiscal - tight money, tight fiscal-easy money and tight fiscal - tight money. The choice of policy mix has important implications both in the short-and long run (Tobin, 1986; Brimmer and Sinai; 1986; Ribe and Beeman, 1986). In effect, the policy mix must be understood. A historical perspective of

policy mix in the US is offered by Dornbusch, Fischer and Startz, 2008; Carlson, 1982; Brimmer and Sinai, 1986; and Kuttner, 2002. Although policy mix in the US has been determined as much by accident than by design (Kuttner, 2002), records show that periods when both policies were tight were associated with recessions, while the periods when both policies were easy were associated with economic expansions (Carlson, 1982). In a closed economy, the conventional treatment of the appropriateness of policy mix in economic stabilization has been discussed in the context of the Investment Savings-Liquidity Money (IS-LM) framework. Both fiscal and monetary policy affect the IS and LM curves, respectively, by shifting them upwards or downwards depending on policy stance.

3.2.2   The Choice of Policy Mix in an Open Economy

In an open economy, the choice of policy is more problematic because of the need to maintain internal balance of full employment level of output with price stability and external balance of payment equilibrium. Fiscal and monetary policy actions have decisive impacts on the balance of payments although their impacts depend on the exchange rate regime. Under conditions of perfect capital mobility, interest rate differentials trigger the movement of capital from one country to another. Fiscal and monetary policies have opposite effect on the capital account and hence the balance of payment through their impacts on interest rate. A number of studies have analyzed the implications of stabilization policy in open economies and the policy combinations required to meet given targets.

Early attempt is credited to Meade, 1951; Tinbergen, 1952, 1954; Mundell, 1962, 1963; and Fleming 1963, among others. The famous instrument-target approach of Tinbergen suggests that if the government hopes to attain a given number of objectives, then the number of instruments must be as many as the number of targets, implying that the insufficiency of

instruments is the problem associated with macroeconomic stabilization. Kaldor (1971) emphasized this point, observing that the failure of the post-war governments to pursue policies consistent with declared objectives was synonymous to attempting to achieve too much with too little. Earlier, Mundell (1962) addressed the problem of achieving internal stability and external stability under a fixed exchange regime. His argument is that monetary policy should be targeted at achieving balance of payments equilibrium, while fiscal policy is better able to deal with internal instability. Indeed, Mundell warned that failure to follow his policy prescription may worsen a disequilibrium condition.

In effect, the implications of the study for macroeconomic stabilization where policies are restricted to monetary and fiscal policy instruments are that: a surplus country experiencing inflationary pressure should use a combination of easy monetary policy and tight fiscal policy; and a deficit country suffering from unemployment should apply a mix of tight monetary policy and easy fiscal policy. This prescription is somewhat related to what he termed 'the principle of effective market classification," meaning that policies should be paired with the objectives on which they have the most influence. In a later paper, Mundell (1963) examines the implications of increased capital mobility under fixed and flexible exchange rates. The paper concludes that under condition of perfect capital mobility, fiscal policy has a strong influence on employment in a fixed exchange regime, while monetary policy has a strong influence on employment in a flexible exchange regime. Similar conclusions were arrived at by Flemming (1962), hence, the popular Mundell-Fleming Model.

On a general note, Niehans (1968) summarizes the key findings of earlier studies, as follows: (1) it is necessary to pair instruments and targets; (2) the Principle that Mundell

called effective market classification is equivalent to a division of labour between policy instruments based on the law of comparative advantage (3) the comparative advantages of fiscal and monetary policies in securing internal and external equilibrium is different for fixed and flexible exchange rates; (4) under fixed exchange rates, fiscal policy usually has comparative advantage for domestic stabilization, while monetary policy is more efficient for maintaining balance of payments equilibrium; (5) the effectiveness of policy instruments is highly sensitive to the degree of international mobility of capital. Particularly, an increase in capital mobility improves the effectiveness of monetary policy for the purpose of external stabilization.

Contributing to the literature, Jones (1968) discusses the optimal policy mix in a slightly disaggregated model in which the current account is subject to influences other than the overall level of aggregate demand. The paper argues that fundamental instruments of policy are tied up; and hence they are not available for the pursuit of other economic goals. Thus, a way out of this dilemma is to introduce a wider variety of monetary and fiscal policy tools. It then concludes that with monetary policy tied to maintaining a rate of interest dictated by what is termed "outside goals," the task of raising income to the full employment level fell on two instruments of fiscal policy, government spending and lump sum taxes. In another study, Cooper (1969) shows that as economic interdependence increases, the effectiveness of decentralized policymaking and hence the need for policy coordination to direct the entire instrument to all the targets becomes more compelling. His analytical framework is similar to that introduced by Tinbergen. The effectiveness of policy is measured in terms of the speed with which policymakers restore the target variables to their target values after exogenous disturbances. An important conclusion of this paper is that lack

of coordination among policy makers delays achievement of national objectives such as full employment and a targeted rate of growth.

In sum, this theoretical review shows that fiscal and monetary policies are both important tools for macroeconomic stabilization. In a closed economy, both polices have differing influence on the components of aggregate demand. However, in an open economy macroeconomic stabilization becomes more complicated because of the need to maintain both internal and external balance. Unfortunately, the use of both policy tools is not straightforward, as there are tendencies for conflicts in objectives and necessitating trade-offs. Theory suggests that a combination of both fiscal and monetary policy in an optimal manner would yield a better outcome than using fiscal or monetary policy alone. It is important to assess and understand the impact of the various mixes of policies on the economy for the purpose of future policymaking.

3.3 EMPIRICAL LITERATURE

Generally, empirical studies have examined policy coordination in three different contexts. The first, which is the subject under study, considers the strategic interaction between the fiscal and the monetary authorities in a domestic economy. The second stream of research centres on policy coordination in the context of a monetary union. The third perspective relates to international policy coordination among countries. These three areas are similar, in the sense that an action taken by a policymaker has significant consequences on others both within and outside the economy. In a monetary union, such as the European Monetary Union (EMU), researchers have attempted to characterize the strategic interaction between multiple fiscal authorities and a single monetary authority on the one hand, and the interaction among the fiscal authorities on the other. In this setting, the presence of

symmetric and asymmetric shocks generate basis for stabilization policy. A central issue of concern therefore is the effectiveness of stabilization policy in the face of stringent fiscal requirements introduced by the Growth and Stability Pact. The fiscal stringency criteria has reduced the degree of fiscal activism in the EMU, and hence, the effectiveness of stabilization policy on output and prices (Engwerda, Aarle and Plasmans, 2002). Studies in this area are vast and growing. Among other things, the studies on international policy coordination have been concerned with the nature and size of the transmission of policy changes and shocks between countries. Key results indicate that the magnitude of the difference between coordinated and uncoordinated policies depends on several factors, including the structure of the economies, the nature and size of the transmission of policies between countries, the objective functions of policymakers and the types of shocks to which policy makers may be responding (Mckibbin, 1997).

3.3.1 Evidence on the Reaction of Fiscal and Monetary Policies to the State of the Economy

A foremost approach for examining the relationship between monetary and fiscal policies is to consider how the monetary and fiscal authorities respond to the state of the economy. The purpose is two-fold. The first is to determine whether such responses are systematic or not. Second, it permits the analysis of the response of monetary policy to fiscal policy and vice versa. In the context of the latter, the outcome would indicate the extent of policy coordination between both authorities. In this connection, Abram et al. (1983) examine the relationship between fiscal policy actions and the state of the US economy for the period 1953–77 and three sub-periods consisting of the Presidential Administrations of Eisenhower, Kennedy-Johnson and Nixon-Ford. Specifically, fiscal policy reaction functions are estimated using Ordinary Least Squares (OLS) Technique for the whole period and the three sub-periods to determine the extent to which there have been systemic policy responses

of the federal budget to forecasts of inflation and unemployment. The approach also enabled the study to test for political influence on the budget policy. The paper finds a fairly strong evidence of a systematic countercyclical fiscal policy response to the unemployment rate, but not to the inflation rate for the whole sample period. For the Eisenhower Administration, there is some evidence of systematic fiscal policy response to the unemployment rate. However, as inflation was not an issue during this period, the results did not reflect any response of fiscal policy to this variable. Further results on the Kennedy-Johnson years show that fiscal policy responded to the inflation rate. However, where it responded to unemployment significantly, other considerations might have taken prominence over countercyclical policy. Estimates for the Nixon-Ford period suggest that fiscal policy responses were somewhat faster and more systematic. There is significant evidence of responses to both inflation and unemployment and the implied lag in fiscal policy action is considerably shorter than in the earlier periods. With respect to political influences on budget policy, estimates generally do not provide support for the hypothesis.

Extending the study by Abram et al. (1983), Bradley and Potter (1986) examine the relationship between monetary and fiscal policies for the US in both the Reagan administration and the previous two administrations, namely, the Nixon-Ford and the Carter. The paper derives and estimates simultaneous monetary and fiscal policy reaction functions covering the period 1969:2 - 1984:3 with the aim of uncovering the extent of policy coordination between fiscal and monetary policies. In addition, it attempts to illustrate how fiscal and monetary policies have differed among the various governments. The paper differs by allowing for the joint determination of both policies instead of assuming that monetary policy is exogenous to fiscal policy. To measure the response of discretionary fiscal policy to the state of the economy and thus remove the influence of automatic stabilizers, a cyclically

adjusted budget balance was adopted as the fiscal policy measure, while the money growth rate was used as a measure of monetary policy. Findings of the paper concerning the Reagan administration are as follows: (1) the administration abandoned fiscal policy as a stabilization tool; (2) variations in the rate of money growth indicate that monetary policy has been used to combat unemployment; (3) monetary and fiscal policies were not coordinated during the period. Indeed, both policies appeared to be set by Nash equilibrium in a non-cooperative game in which each authority maximizes its payoff given the policy choice of the other authority. Generally, there was no evidence of policy coordination in the three presidential administrations.

To provide further evidence on monetary and fiscal policy coordination in the US, Kishan and Opiela (2000) test the joint determination of both policies in the pre-Reagan/Bush and pre-Volcker/Greenspan eras using the framework adopted by Bradley and Potter. The paper introduced three innovations: (a) both the Fed and the presidential regimes are considered, including two additional regimes over an extended sample period 1966:1 - 1991:4 (b) two measures of monetary policy, the federal funds rate and the Bernanke-Mihov (1995) Indicator (BMI) are used as policy instruments; and (c) employs the Fed's Greenbook forecasts of unemployment and inflation one quarter ahead as independent variables instead of formulating own forecasts or using current values. Two Stage Least Squares (TSLS) estimates are provided for the reaction function equations of four regimes: Pre-Reagan/Bush, 1966:1–1981:1, Reagan/Bush, 1981:2-1991:4, pre-Volcker/Greenspan, 1966:1–1979:2 and Volcker/Greenspan, 1979:3–1991:4. The result for the entire sample period indicates that unemployment is significantly and negatively related to fiscal policy as expected. In other words, fiscal policy reacts strongly to unemployment across the four regimes. The impacts are much stronger when the federal funds rate is used as the policy instrument. Overall, fiscal

policy failed to respond significantly to either inflation or to monetary policy in the earlier administrations. However, monetary policy reacts to forecast of expected inflation and insignificantly to unemployment forecasts. Also, the two policies do not react to each other, an obvious indication of non-cooperation between the Federal Reserve and the government. Fiscal policy appeared to have anti-recessionary bias, while monetary policy response to inflation was mixed. Of note, the results for the Reagan/Bush and Volcker/Greenspan administrations show that fiscal policy reacted to the inflation and unemployment forecasts but not to monetary policy. On the other hand, the Federal Reserve did not respond to inflation but reacted mildly to unemployment and fiscal policy.

3.3.2 Evidence on the Effectiveness of Fiscal and Monetary Policies: the Monetary - Fiscal Policy Debate

Intensely debated in the empirical literature, is the usefulness of fiscal and monetary policy as discretional stabilization tools. In this regard, a substantial number of studies have been conducted, both in the advanced countries and developing countries. For example, in the advanced countries, reference is usually made to Anderson and Jordan (1968), Gramlich (1969), De Leeuw and Kalchbrennen (1969), Anderson and Carlson (1970), Keran (1969, 1970), Elliot (1975), Friedman (1977), Hafer (1982), Batten and Hafer (1983), Jordan (1985), Batten and Thornton (1986). In the developing studies with particular reference to Nigeria, many studies have also been undertaken , including Ajayi (1974), Darrat (1984), Olaloye and Ikhide (1995), Asogu (1998), Ubogu (1983), Ajisafe and Folorunso (2002), Adefeso and Mobolaji (2010). The three commonly tested propositions in the literature concern which between fiscal and monetary action are stronger, more predictable and faster-acting.

The results from the original study by Anderson and Jordan or what is popularly termed "the St. Louis Model' and succeeding works, tended to suggest that fiscal policy

actions are ineffective for the purpose of economic stabilization, a sharp contrast to conventional wisdom. This pointed to the advisability of greater reliance being placed on monetary policy. Indeed, results from Anderson and Jordan were not consistent with any of the propositions, hence the conclusion that either the commonly used measures of fiscal influence do not correctly indicate the degree and direction of such influence or there was no measureable net fiscal influence on total spending during the period of 1952(I)–1968(II). Of note, Keran (1969) in a study of the US economy, over a long period of time spanning 1919 – 1969, finds that monetary influences dominated economic activity in periods when financial and institutional factors were substantially different. That is, in the period of depression, 1929–1939, and in the periods of prosperity, 1919–1929 and 1953–1969. But, to Gramlich (1969), monetary policy matters greatly, although fiscal policy matters, too. Similarly, De leeuw and Kalchbrennen (1969) confirm that with alternative and highly plausible measures of fiscal and monetary action, fiscal policy tended to exert a significant influence on the Gross National Product (GNP) in the expected direction. Monetary policy was also reported to exert a powerful influence. Meanwhile, Darrat (1984) admits that although evidence emerging for several developed countries favoured the use of monetary policy, these results may not apply for the developing countries because of their different economic and financial conditions. Applying a modified single equation approach in a study of five Latin American countries, covering Brazil, Chile, Mexico, Peru and Venezuela, over the period of 1950–1981, findings reveal that fiscal policy has exerted significantly stronger impact, consistently more predictable and rapid than monetary policy contrary to earlier results.

The majority of the studies on Nigeria conclude that monetary rather than fiscal policy exerts greater impact on economic activity irrespective of the reference period used and differences in econometric methodology, as observed in Ajayi (1974), Ubogu (1983),

Asogu (1998), Ajisafe and Folorunso (2002), Adefeso and Mobolaji (2010). Virtually all the studies were done in the context of the St. Louis single equations approach, the Ordinary Least Squares and the Cointegration techniques being the popular instrumentalities of analyses. In some cases, an export variable was included to capture the impact of external influence. Evidence tended to suggest that there should be more emphasis on the use of monetary policy for economic stabilization in Nigeria. In addition, some authors observe that fiscal policy actions have been more distortionary (Ubogu, 1983; Asogu, 1998; and Ajisafe and Folorunso, 2002. Yet, it was believed that monetary and fiscal policies should be complementary and hence coordinated (Olaloye and Ikhide, 1995; Asogu, 1998; and Ajisafe and Folorunso, 2002). Indeed, the study by Asogu, which focused on the relative effectiveness of money supply and government expenditure as the more appropriate tool for economic stabilization in Nigeria, finds that where annual data were used, the coefficient of money supply was statistically very significant, while those of government expenditure were not. However, applying quarterly data, the paper further reports that changes in government expenditure appeared to influence GDP very powerfully irrespective of whether first difference or percentages were used in estimation.

More importantly, the impact of government expenditure appears to be more distorting with wrong signs, and thus, underscores the need for such expenditure to be coordinated and programmed with monetary policy. Nevertheless, fiscal policy has been more effective in moving the Nigerian economy out of depression (Olaloye and Ikhide, 1995). Using monthly data, for the period, which coincided with the Structural Adjustment Programme, 1986 - 1991, the authors find that monetary policy proxied by money supply was not relevant during the period. In contrast to the other studies, these findings suggest that the most appropriate fiscal policy tool is government expenditure. Further results

indicate that the lag in the effect of fiscal policy is much shorter than that of monetary policy. In order words, a reduction in expenditure would take a shorter time to cause a fall in GDP than similar reduction in the money supply.

3.3.3 Evidence on the Existence of Policy Coordination and Implications on Macroeconomic Performance of Non-coordination

A central focus of empirical works on the theme of this study is the examination of the existence of policy coordination or mix and the implications of the absence of coordination on economic performance. Several studies, such as Gandolfo and Petit (1987), Petit (1989), Hughes–Hallet and Petit (1990), Nordhaus (1994), Chow (1972), Nasir et al. (2010), have examined this issue. Early works, such as Galdolfo and Petit (1987), Petit (1989, 1990), and Hughes–Hallet and Petit (1990) focused on the Italian economy. Specifically, Gandolfo and Petit illustrate the application of optimal control techniques based on the Pontryagin's maximum principle to a macroeconomic model of the Italian economy specified as a system of 23 stochastic differential equations. In the control exercises performed, the paper evaluates the dynamic properties of the model and analyzes the optimal responses to different targets and instruments. Evidence from this study emphasizes the importance of combining fiscal and monetary policies. In fact, results revealed that with an optimal policy mix, the rate of inflation could have been lowered in Italy to 8.4%, while the rate of growth in output could have been pushed up to 8%. International reserves on the other hand, would have grown by more than 22%. Further results indicate that the three targets aimed at higher output growth, lower inflation and slightly growing reserves were met entirely through optimal control policies. The limitation of this study is that the control of the economy is assumed to be done by a central planner.

In its contribution, Petit (1989) examines the interaction between the Treasury and the central bank of Italy in the case of both cooperative and non-cooperative behavior. In this paper, dynamic games methods were applied to calculate the optimal fiscal and monetary policies within a continuous time macro-econometric model of the Italian economy. The results obtained by assuming an optimizing behavior of the two political institutions, both cooperative and non-cooperative, are much more satisfactory, succeeding in bringing inflation down to 7.8%, rate of growth of output is up to 8.4%, rate of growth up of reserves to 18.6%. Hence, it argues that the poor performance of the Italian economy in the period covered could not be attributed to the lack of coordination between both institutions. The unsatisfactory performance of the Italian economy must be attributed to the use of non-optimal policies, as also noted by Gandolfo and Petit (1987). Optimal policies, even when decentralized and carried out in isolation give rise to better outcome. Inefficiency in the non-cooperative case manifested in lower speed of adjustment to equilibrium, higher cost to the players, and also in the fluctuating behavior of targets.

The paper by Chow (1972) measured the gain from optimal control when knowledge of the model parameters is uncertain. It finds that cooperation produces better results in terms of the lower cost to both players. Considering the payoffs of both players only though, the result shows that the scope of cooperation may be limited, suggesting that other gains from coordination should be sufficient to induce policymakers to coordinate policies. The other potential policy coordination gains mentioned include the smaller fluctuations in the behavior of targets, the possibility of following less restrictive policies and the higher speed of convergence of the economic system.

Extending the previous studies, Hughes–Hallet and Petit (1990) consider the optimal inflation-growth combination for the Italian economy for the period 1977–1981, under the assumptions of decentralized decision making. To accomplish the objectives of the study, the paper utilizes dynamic game to calculate the efficient trade-off between output and inflation, and hence explores the differences in the policy possibility frontier, which arises as a result of cooperation and non-cooperative policymaking. Results from the cooperative case exhibit trade-off reversal with no conflict arising between output and inflation targets. Furthermore, the paper observes that giving government greater power to determine the optimal policies does not always produce better outcomes than if the central bank assumes greater power. The results highlight the potential costs of forcing the central bank to accommodate government fiscal plans. To the authors, increasing the government's power would ensure relatively good output and inflation results by moving the trade-off curve itself from one position to another. However, when the bank is assigned significant role, it opens up opportunities for greater output at the same or lower inflation levels by creating shifts along the trade-off curve. In order words, giving the central bank the freedom to combat inflation both frees up the government and allows it greater scope to select policies that increase growth. For this reason, cohabitation by agreement is better than a forced marriage, the paper concludes. Results of the study on the non-cooperative case are completely different and inferior to the cooperative case. Non-cooperative decision making not only imposes a policy conflict, which did not exist under cooperation, it also effectively removes the government's freedom to choose its preferred policies for resolving conflict.

Elsewhere, Nordhaus (1994a, 1994b) develop a game theoretic model of fiscal and monetary policies coordination and show that macroeconomic outcomes depend on the degree of coordination or independence. Examining the US experience in the early 80's,

Nordhaus observes that the monetary-fiscal policy mix is rather skewed in an undesirable direction. While the fiscal deficits of the Reagan administration were pulling the economy toward a high consumption strategy, the tight anti-inflationary stance of the Volcker led Federal Reserve, was pulling the economy toward a low investment strategy, suggesting that the two policymakers might be matching to different drummers. The telling effect was a decline in US savings with high real interest rates. In the analytical approach adopted, the paper analyses the impact of separation of economic powers among policymakers and the possible implication for macroeconomic outcomes. Adopting the Clinton Economic Plan, as example of a monetary-fiscal policy game, three alternative macroeconomic models are used to estimate the likely macroeconomic impacts of different degrees of coordination. Estimates of the total gain from coordination is about $2–$3 trillion of cumulative output over the following decade, while the cumulative loss from non-cooperative policy is between 20% and 58% of one year GDP over the 1993–99 period. Findings from this monetary-fiscal game suggest that there is a large price to pay for the lack of coordination of macroeconomic policies. Indeed, the potential gain from coordination is observed to be extremely high. Following the VAR approach of Nordhaus (1994b), Nasir et al. (2010) investigate the presence of coordination between fiscal and monetary policies, using annual data from 1975 - 2006 for Pakistan. In the paper, the results suggest weak or very little evidence of policy coordination. On the basis of the findings, it concludes that more coordination among policymakers is needed to stabilize the economy and insulate it from external shocks.

In a study on the Austrian economy, Neck (1999) considers a dynamic game between the government and the central bank on the assumption that both policymakers optimize linear quadratic inter-temporal objective functions. Further assuming that both policymakers have different preferences about unemployment, inflation and policy instruments, it analyses

the possible conflicts between fiscal and monetary policies in the design of stabilization policies in Austria for the 1990s. Deploying an econometric model of the economy, it calculates numerical time path of control and endogenous variable for non-cooperative and cooperative solutions. The outcome of the study suggests that a more countercyclical policy is required than the model projected. Further results indicate that the government has more powerful influence on macroeconomic targets than the central bank. Also, the non-cooperative outcomes, both with and without unilateral commitments and cooperative outcomes are close.

In their study, Arby and Hanif (2010), explores the situation in Pakistan, arguing that monetary and fiscal policies have been independently executed throughout the period 1964/65 - 2008/09, contrary to general perception. To them, even the establishment of a Monetary and Fiscal Policies Coordination Board did not improve the situation. They note few instances, especially during the military regimes, where policy coordination was relatively high compared with democracies, in addressing economic conditions, which could explain why economic performance was better in such regimes. According to their methodology, the fiscal and monetary institutions are considered independent if there is no cointegration and pair-wise causality in their respective indicators of policy stance.

Provisional results from Raj, Khundrakpan and Das (2011), on India, for the 2000Q2 to 2010Q1 suggests that even the elimination of monetization of fiscal deficit and prohibiting the central bank from buying government securities in the primary market, could not reduce the influence of fiscal policy on the conduct of monetary policy. Adopting a vector auto-regression approach, the study finds that the reaction of the two policies to inflation and output shocks were mostly in the opposite direction – monetary was countercyclical, while

fiscal policy was pro-cyclical. Furthermore, expansionary monetary policy improved output performance in the short-term but worsened it in the long term.

3.3.4 **Evidence on the Substitutability and Complementarity of Monetary and Fiscal Policies**

It has long been debated in the theoretical literature whether fiscal and monetary policies are substitutes or complements. For example, if both policies are perfect substitutes, then employing both of them to pursue a course of action would just amount to duplication of efforts. But, if they are complements, then the need for policy coordination is reinforced. In this direction, Muscatelli, Tirelli and Trecroci (2004) provide a structural econometric interpretation to the interaction of monetary and fiscal policies using an estimated New Keynesian Dynamic General Equilibrium (NKDGE) model for the US over the sample period 1970 – 2001, in contrast with earlier studies using VAR. It estimates an New Keynesian (NK) model of inflation and output jointly with monetary and fiscal rules to provide understanding of the way in which different macroeconomic policy instruments interact over the business cycle. It shows that the strategic complementarity and substitutability of fiscal and monetary policy depends crucially on the types of shocks hitting the economy and assumptions about the underlying structural model. More importantly, the historical simulations reveal that since the 1990s, the two policy instruments have moved together in a more complementary way. The paper further demonstrates that countercyclical fiscal policy can be welfare reducing if fiscal and monetary policies are not coordinated. However, a critical review of this paper reveals that it suffers from some weaknesses. First, it was limited in scope in the sense that the only channel through which interaction occurs is aggregate demand. Second, it used a closed economy model of the US arguing that openness is less important for the US economy. Furthermore, to evaluate the importance of interactions between monetary and fiscal authorities in determining macroeconomic outcomes, it is

essential to identify the different monetary regimes. Also, the government budget constraint should be explicitly included in the macroeconomic model, as was also pointed out by Favero (2004).

Evidence from Gandolfo and Petit (1987) also emphasize the importance of combining fiscal and monetary policies. Interestingly, the best set of tools was the combined use of public expenditure and monetary policy. In particular, when the policymaker had the choice of one instrument as control variable, public expenditure performed better than the rest. Taxes alone and monetary policy alone are not able, even when used optimally, to drive the system to the given ideal path. The implication is that to move the economy forward, fiscal policy can be better manipulated through government expenditure than taxes. In Pindyck (1973), the optimal control problem was defined as a dual discrete-time tracking problem for a linear time-invariant system with a quadratic cost function. The paper finds that when lags are involved, as are found in monetary policy, the instrument must be applied in strong bursts. This distinguished monetary policy from fiscal policy, and can often undermine the policy mix and the timing of the two. It then concludes that monetary and fiscal policy may in some instances not be substitute for each other, but must be used in combination. A major weakness of the paper is the inconsistency of the estimates. This resulted from the fact that the estimation was conducted with two-stage least squares with a Hildreth-Lu procedure since no other method was computationally available for dealing with the problem of autocorrelation at the time. In contrast, Nordhaus (1994b) finds that both fiscal and monetary policies matter for aggregate demand, and in fact they are perfect substitutes in the effect, even on unemployment in the short run.

3.3.5 **Evidence on the Determination of Public Debt**

A number of studies have examined the interaction of both the fiscal and monetary authorities in the determination of public debt. The motivation behind these studies was to ascertain the policy regime that adequately describes the interaction between policymakers. On this theme, Tabellini (1986) develops an analytical model as a dynamic linear-quadratic game between the fiscal and monetary authorities, to show that the equilibrium outcome of the game determines the time path of money creation, fiscal deficits and public debt. The paper's main findings include the following: (i) coordination increases the speed of adjustment towards the steady state and takes the steady state value of public debt closer to the desired target; (ii) pre-commitments take the non-cooperative equilibrium closer to the coordinated outcome. (iii) increasing the weight that each policymaker assigns to his own private objectives slows down the adjustment process, places more burden on the opponent, but has ambiguous effects on the steady state value of public debt. In a subsequent study, Tabellini and La Vai (1989) undertake empirical estimation of the underlying parameters of a dynamic game between the fiscal authority and the monetary authority over the determination of public debt in the United States for the period 1955 - 85. The primary objective is to find out whether the prevailing regime is Ricardian where monetary policy is dominant, or a fiscal regime of the Sargent and Wallace (1981) type, where fiscal policy is dominant. The main finding is that during the period of the study, the burden of stabilizing public debt was borne by the fiscal authority. The cyclically adjusted fiscal deficit net of interest payment is negatively related to the stock of public debt outstanding at the beginning of the year, and as well as the monetary base.

In their study, Bartolomeo and Gioacchino (2004), in a two-stage game, demonstrate that, if both policymakers can communicate before the game is played, then the coordination problem can be solved by using the concept of correlated equilibrium. Further results show

that under monetary leadership, the central bank is given the first mover advantage and it is not forced to bail-out fiscal decisions. However, under fiscal leadership, the government is given first mover advantage, and the central bank is forced to monetize public debt, but it could not guarantee monetary stability. In contrast to the Nash Solution, the correlated equilibrium allowed the behavior to be coordinated. Similarly, Togo (2007) illustrates the consequences of uncoordinated policies by extending Sargent and Wallace (1991, 1993), including the debt manager as a weak policymaker. The author's key argument is that debt management should have a separate objective and separate instrument just like fiscal and monetary policies. It demonstrated how a weak debt manager without separate policy goal could lead to inconsistent policy mix. The major limitation of this paper, however, is that there was no attempt to carry out a joint optimization exercise, merely highlighting the importance of policy separation and coordination to ensure consistency of policy mix. Secondly, as in other studies, it was purely analytical in nature. There was no further attempt to justify the findings by empirical application.

More recently, Obinyeluaku and Viegi (2009) were interested in finding out whether fiscal policy can affect monetary policy through debt monetization or through a direct effect on price dynamics. The study could be seen as a test of the Fiscal Theory of Price Determination (FTPD), and thus offers a theoretical model in understanding the implication of the FTPD in a small open economy facing borrowing constraints. Results show that 5 out of 10 countries studied in the Southern African Development Community (SADC) were characterized throughout the period 1980-2006 by fiscally dominant regimes, with weak or no response of primary surpluses to public liabilities, hence, the need for policy coordination in the region. The remaining 5 countries, however, exhibited a monetary dominant regime. In particular, the study finds, as predicted by the FTPD, that changes in primary surplus pass

through to prices by increasing inflation variability. Therefore, fiscal policy matters for achieving and maintaining price stability in the SADC region.

3.3.6   Evidence in a Decentralized Economy Characterized by Conflicting Objectives

Studies such as Petit (1989), Pindyck (1975, 1976), Kydland (1975, 1976) consider macroeconomic stabilization policymaking in a decentralized setting i.e under the assumption that monetary and fiscal controls are exercised by separate authorities, who may have different objectives. Here, each authority is assumed to minimize its quadratic cost function subject to a linear econometric model. Previous work by Pindyck (1972, 1973), demonstrates how optimal policies could be calculated in a deterministic setting using a linear or linearized econometric model and a quadratic cost function, which penalizes deviations of target and policy variables from a set of ideal paths. Subsequently, Pindyck (1975) analyzes a similar problem by calculating open-loop and closed-loop Nash Strategies for a linear-quadratic discrete differential game, and further applying the result to a small macroeconomic model of the US. In the open loop strategy, each authority designs its optimal policy based on its own objective at the beginning of the planning period, and then sticks to it throughout the period. In the case of closed-loop strategy, each authority designs a control rule, and continuously revises its policy subject to the evolving strategy of the other player. The findings suggest that conflict situations could result in the deterioration of economic performance.

Extending the previous study, Pindyck (1976) applied the Nash algorithm to calculate the increased cost to each authority resulting from a conflicting objective of the other authority. The intuitive reasoning is that over time a conflict in objectives would be resolved by implicit compromise. Thus, the economy is bound to suffer in the short term because of

conflicting objectives. To enrich the literature, Kydland (1975) considers the main approach to the study of the decentralized control as one of an assignment problem. It proposes a game theoretic framework to study the so-called assignment problem in a dynamic setting using a simple model of the US. In addition, stimulations were done to show how the targets might be approached with two different assumptions of the relative weights that the two policymakers place on the objectives. In comparison with the wrong assignment case, the paper shows that the system was still stable in the sense that the targets were approached from any initial point, but speeds of adjustment towards the targets are significantly slower than for the case of the correct assignment.

3.3.7 **Evidence on the Time Inconsistency Problem and Optimal Policymaking**

Two seminal papers, Lucas (1976), and Kydland and Prescott (1977) altered markedly the way macroeconomic stabilization policymaking is done. Lucas (1976) casts serious doubt on forecasting models, while the Kydland and Prescott paper raises concern about the time inconsistency of optimal control policies. Consequently, another strand of literature emerged, examining issues concerning commitment and discretion. Kydland and Prescott (1977) discuss the issue of the inappropriateness of optimal control as a tool for economic planning. As Lucas (1976) argues, optimal decision rules vary systematically with changes in the structure of series relevant to the decision maker, therefore any policy rule changes would alter the structure of these rules. Under conditions of rational expectations on the part of economic agents, Kydland and Prescott argue that the assumptions of optimal control theory become inconsistent. The authors find that discretionary policy typically results in inferior outcomes, thus suggesting that relying on some policy rules could enhance economic performance. In effect, optimal control would only be relevant if expectations are invariant to the policies selected in the future. But, Dore (1995), responding to the Kydland

and Prescott argument notes that a policy that satisfies the Bellman's Principles of optimality will necessarily ignore certain interaction terms that will occur in a differential game, so that the total cost to the government of a time consistent policy is likely to be higher, and hence the sub-optimality.

In what appeared as a rebuttal to the critical comments by Lucas (1976) and Kydland and Prescott (1977), Chow (1980) in his paper attempts to address the problems identified and shows that optimal control is indeed applicable in an environment of rational expectations. To do this, the paper includes expectations of future variables in linear and non linear models both for econometric policy evaluation and econometric policy optimization. Thus, contrary to claims by Kydland and Prescott (1977), optimal control theory would still be applicable when current decisions of economic agents depend in part upon expectation of future policy actions. The discussions in the paper addressed some of the issues raised by Lucas (1976). In arriving at its result though, Chow assumes that the policymaker is credibly committed to announced policies, neglecting the situation where the policy has discretion. This was the flaw in Chow's analysis.

Further on the issue of commitment versus discretion, Barro and Gordon (1983) contend that discretionary policymaking can create surprise inflation, which may reduce unemployment and raise government revenue. However, when agents understand the incentives faced by the policymaker, surprises cannot systematically occur, resulting to excessive monetary growth and inflation. In the words of Barro and Gordon, "given the repeated interaction between the policymaker and the private agents, it is possible that reputational forces can substitute for formal rules". Arguing in favour of rules over discretion, the paper concludes that outcomes would improve if rules commit future policy choices in the appropriate manner. Following this development, Miller and Salmon (1985)

examine dynamic games and the time inconsistency problem in open economies, analyzing the design of macroeconomic policy under a variety of different strategic relationships between rational policymakers in an environment of rational expectations on the part of private agents. The design of economic policy would be time inconsistent because the policymaker acts as a stackelberg leader as in Kydland and Prescott (1975). Thus, to this paper, time inconsistency may be avoided by ruling out strategic asymmetry. The maximum principle was applied to derive the optimal time inconsistent policies under the regime of strategic dominance and various other time consistent alternatives.

In summary, several lessons can be drawn from this empirical review, which has contributed to the understanding of the research problem. First, policy coordination between the fiscal and the monetary authorities is important, as supported by empirical evidence. The findings suggest that in a decentralized setting, conflicting objectives could result in the deterioration of economic performance. Hence, with an optimal policy mix, the objectives of macroeconomic stabilization could be achieved. Second, the absence of policy coordination may not be the reason behind poor macroeconomic performance. This implies that the pursuit of optimal policies independently by two separate authorities could yield a better outcome. Third, the identification of policy regimes, fiscal leadership or monetary leadership, is necessary to determine the nature of the interaction between the monetary and fiscal authorities, particularly with respect to the determination of public debt. Finally, the evidence illustrates how discretionary policy by the fiscal authority can lead to the time inconsistency problem and thus inferior policies. But, with appropriate modeling of rational expectations on the part of private agents, this problem could be eliminated. All these are pertinent issues on which gaps exist in the sense that empirical studies on Nigeria are lacking. Thus, to

contribute to the debate, the study empirically examines policy coordination in Nigeria within the context of the existing literature.

3.4   **METHODOLOGY REVIEW**

Different approaches and techniques have been applied in the empirical literature to examine the coordination problem. Muscatelli, Tirelli and Trecoci (2003) utilize a New Keynesian Dynamic General Equilibrium (NKDGE) model of inflation and output jointly with monetary and fiscal rules to provide understanding of the interaction of different macroeconomic instruments over the business cycles. In the studies that applied the Vector Auto-regression Approach (VAR), such as Nordhaus (1994b) and Nasir et al. (2010), the main purpose is to examine how the exogenous variables of the models respond to shocks in the endogenous variables. This approach was intended to see how quickly shocks are absorbed, so that weak responses to shocks indicate the absence of policy coordination between the fiscal and monetary authority. In particular, Nordhaus investigates monetary reactions to fiscal policies. The VAR maps out the relationship between the major variables to assess how targets respond to policies and how policies respond to targets.

A substantial amount of the studies using the concept of games is analytical in nature. Typically, the analysis begins with the assumption that the government controls fiscal policy, while the central bank controls monetary policy. Given further assumptions that the government establishes an output target and the central bank sets an inflation target, the further away the actual level of output and rate of inflation are from their respective targets, the more disutility each authority suffers. Each authority would therefore set its policy to minimize its own loss function. The outcome of the games varies depending on whether both policymakers cooperate or not. When both authorities cooperate and, therefore, policy coordination occurs, the game is modelled as the choice of the two policy variables to

minimize a weighted average of the two loss functions. In the case of non-cooperation, both fiscal and monetary policies are chosen independently and simultaneously by each authority to minimize their individual loss functions, or one authority sets its policy before the other authority determines its own.

Analyses in the game theoretic setting are in two parts, static and dynamic games. As in Oudiz and Sachs (1984), Hamada (1969) and Canzoneri and Gray (1985), in a static or one shot game, there is no room for repeated play since the game is played only once. Obviously, this is not an adequate representation of the nature of strategic interactions between economic agents, since in this framework one would not be able to capture the dynamics of economic behavior. In a dynamic or differential game, the strategic interaction is in the form of a continuous play, and is most suitable in modeling phenomena that undergo time evolution. In other words, the agents involved are assumed to be in continuous interaction with one another, so that decisions made in the past influence current and future decisions, and thus the outcome of the game.

The policy coordination problem has also been expressed as a problem of optimal control. Indeed, the dynamic game approach can be seen as an extension of this technique. Under this approach, the standard solution techniques include the Pontryagin's minimum principle and the Bellman's dynamic programming. For optimal deterministic control with one decision maker, the two methods yield the same optimal actions (Zeeuw and Van der Ploeg, 1991). The results are however, different if the problem involves two or more decision makers. The game has been expressed as discrete time difference game (Pindyck, 1975) or as a continuous time differential game (Petit, 1989). That is to say that difference games are dynamic games in discrete time, while differential games are dynamic games in continuous

time. Finally, the model could be deterministic (Pindyck, 1972, 1973, 1976) or Stochastic (Chow, 1972a, 1972b).

Few studies with specific focus on the US economy have explored the interaction of fiscal and monetary policies under the reaction function approach. This methodology specifies reaction functions of both the fiscal and monetary authorities that permit the analyses of the joint interaction of both policies in response to the state of the economy. In the process, it also examines how fiscal policy reacts to monetary policy and vice-versa. By so doing, one can easily evaluate the degree of interdependence or coordination between fiscal and monetary policies. The reaction functions also allow the researchers to test for political influence on the budget policy. This approach has been particularly useful in determining whether policy responses are systematic or not, under different fiscal and monetary regimes.

From the alternative methodologies considered, the game theoretic approach appears to be more robust and perhaps a better characterization of the coordination problem. Also, since the coordination problem can be expressed as a problem of optimal control, then it is possible to apply dynamic game techniques using the Pontryagin's minimum principle. However, it is often a computationally cumbersome exercise to arrive at the numerical solutions to the optimal control problem. The VAR approach is good in that it clearly reveals how policymakers could respond to external disturbances arising from strategic interdependence. But, VAR tends to be discredited owing to its lack of theoretical support. Therefore, in this study, monetary and fiscal policy coordination would be examined following the reaction function approach. However, a limitation of this approach is that reaction functions may not reveal why there is lack of policy response. They may only tell whether fiscal and monetary policies have jointly responded to an economic situation in a

systematic manner or not. In the context of policy coordination, this approach may also only reveal whether both policies have responded to each other systematically or not. Despite these limitations, this approach is still suitable for the study because it is relatively simple and would achieve the objectives of the study.

CHAPTER FOUR

THEORETICAL FRAMEWORK AND METHODOLOGY

4.1   INTRODUCTION

The Chapter considers the theoretical framework, the methodology for the study and data issues. It begins by setting out the theoretical approach in the context of policy reaction functions from which the empirical models are derived. The theoretical framework further describes the possible relationships that could exist between the fiscal and monetary authorities and how the signs and magnitudes of parameter estimates give guidance about the nature of relationships. The section on the methodology presents the empirical models, estimation technique, the variables and their definitions, and describes some adjustment performed prior to model estimation. The section also provides the relevance of the methodological issues considered. Discussion of the data sources is the subject of the last section. Overall, the Chapter provides the basis for the empirical estimation and discussion of results in Chapter five.

4.2   THEORETICAL FRAMEWORK

The section presents a general framework that permits the investigation of the relationship between monetary and fiscal policies. It considers the possibility that both policies are not completely exogenous to each other. In order words, each policymaker takes into account the actions of the other during policy formulation and implementation. In this context, policy outcomes are the result of the joint interaction of fiscal and monetary policy measures with other variables of the economic system. In what follows, the fiscal and monetary policy reaction functions are derived simultaneously, as in Bradley and Potter (1986) and Kishan and Opiela (2000), under the assumption that the monetary and fiscal

authorities each minimizes a loss function with respect to policy instruments subject to the constraint of the economy. However, the study introduces some changes to reflect the specific features of the Nigerian economy, which is being modeled.

Accordingly, the loss functions of the two policymakers are modified to include additional macroeconomic variables to which they may be responding. Both the monetary and fiscal authorities strive to achieve the same macroeconomic goals, covering growth in output, reduction in inflation and improvement in balance of payment position. Thus, their respective policy measures are intended to systematically respond to the state of the economy, as characterized by the behaviour of these variables. In addition, the two policymakers also respond to movements in crude oil prices to provide further evidence on responses to the economic cycle. Each policymaker, however, has different preferences for the targets in terms of the relative weights attached to them. Accordingly, the loss function of the government, the fiscal authority, is given by:

$$L^F_t = a_1(GDP_t - GDP^*_t)^2 + a_2(INFL_t - INFL^*_t)^2 + a_3(BoP_t - BoP^*_t)^2 + a_4(OILP_t - OILP^*_t)^2 + a_5(S_t - S^*_t) \quad\text{............ 4.1}$$

Where GDP_t and GDP^*_t are the actual and the desired rate of output growth, respectively. The same interpretation applies to inflation, $INFL_t$, balance of payment, BOP_t, oil price, $OILP_t$, and the fiscal policy measure, the fiscal balance, S_t. Equation 4.1 says that the government chooses the fiscal policy instrument at any time t, to minimize the deviation of actual values of target variables from their desired levels in that period. In other words, the government attempts to achieve the desired policy targets by reducing the difference between the desired budget balance and the actual values. The parameters, a_1, a_2, a_3, a_4, and a_5, are the relative weights placed by the government on the arguments of the loss function. Government fiscal behaviour is subject to the following constraints:

$$GDP_t = \mu_1 St + \gamma_1 M_t \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots4.2$$

$$INFL_t = \mu_2 St + \gamma_2 M_t \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots4.3$$

$$BOP_t = \mu_3 St + \gamma_3 M_t \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots.................4.4$$

$$OilP_t = \mu_4 St + \gamma_4 M_t \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots...4.5$$

Similarly, the loss function of the monetary authority is given by:

$$L^M{}_t = b_1(GDP_t\text{-}GDP^*{}_t)^2 + b_2(INFL_t\text{–}INFL^*{}_t)^2 + b_3(BOP_t\text{–}BOP^*{}_t)^2 + b_4(OILP_t\text{–}OILP^*{}_t)^2 + b_5(M_t\text{-}M^*{}_t)^2 \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots \dots\dots\dots\dots\dots\dots\dots\dots\dots..4.6$$

Here, the variables are the same as before, excepting the monetary policy instrument, represented by M_t, money growth. The monetary authority selects the values of its policy instrument, money growth, Mt, to minimize the deviations of the actual values of the target variables from their desired levels. Next, the constraints facing the monetary authority are specified.

$$GDP_t = \lambda_1 St + \upsilon_1 M_t \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots.4.7$$

$$INFL_t = \lambda_2 St + \upsilon_2 M_t \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots.4.8$$

$$BOP_t = \lambda_3 St + \upsilon_3 M_t \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots.4.9$$

$$OILP_t = \lambda_4 St + \upsilon_4 M_t \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots..4.10$$

All the constraint equations, that is, equations 4.2 – 4.5 together with equations 4.7 – 4.10 imply that both fiscal and monetary policies influence the behaviour of policy targets, while their corresponding coefficients signify the magnitude of the influences. Following Bradley and Potter (1986) and Kishan and Opiela (2000), minimization of the loss functions yields a set of simultaneous reaction functions represented by equations 4.11 and 4.12 in reduced form. To arrive at these results, equation 4.1 is minimized with respect to S_t, subject to equations 4.2 – 4.4. In like manner, equation 4.6 is minimized with respect to M_t subject to equations 4.7 – 4.9.

$$S_t = \pi_{10} + \pi_{11} GDP_t + \pi_{12} INFL_t + \pi_{13} BOP_t + \pi_{14} OILP_t + \pi_{15} M_t \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots..4.10$$

$M_t = \pi_{20} + \pi_{21}GDP_t + \pi_{22}INFL_t + \pi_{23}BOP_t + \pi_{24}OILP_t + \pi_{25}S_t \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 4.11$

Where, $\pi_{10}, \pi_{11}, \pi_{13}, \pi_{14}, \pi_{15}, \pi_{20}, \pi_{21}, \pi_{22}, \pi_{23}, \pi_{24},$ and π_{25} are the reduced form parameters of the model.

$$\pi_{10} = \psi^{-1}[a_1\mu_1 GDP^*_t + a_2\mu_2 INFL^*_t + a_3\mu_3 BOP_t + a_4\mu_4 OILP_t + a_5 S_t]$$

$$\pi_{11} = -\psi^{-1}[a_1\mu_1]$$

$$\pi_{12} = -\psi^{-1}[a_2\mu_2]$$

$$\pi_{13} = -\psi^{-1}[a_3\mu_3]$$

$$\pi_{14} = -\psi^{-1}[a_4\mu_4]$$

$$\pi_{15} = -\psi^{-1}[a_1\mu_1\gamma_1 + a_2\mu_2\gamma_2 + a_3\mu_3\gamma_3 + a_4\mu_4\gamma_4]$$

$$\psi = a_1\mu_1^2 + a_2\mu_2^2 + ca_3\mu_3^2 + a_4\mu_4^2 + a_5$$

$$\pi_{20} = \varphi^{-1}[b_1\upsilon_1 GDP^*_t + b_2\upsilon_2 INFL^*_t + b_3\upsilon_3 BOP_t + b_4\upsilon_4 OILP_t + b_5 M_t]$$

$$\pi_{21} = -\varphi^{-1}[b_1\upsilon_1]$$

$$\pi_{22} = -\varphi^{-1}[b_2\upsilon_2]$$

$$\pi_{23} = -\varphi^{-1}[b_3\upsilon_3]$$

$$\pi_{24} = -\varphi^{-1}[b_4\upsilon_4]$$

$$\pi_{25} = -\varphi^{-1}[b_1\upsilon_1\lambda_1 + b_2\upsilon_2\lambda_2 + b_3\upsilon_3\lambda_3 + b_4\upsilon_4\lambda_4]$$

$$\varphi = b_1\upsilon_1^2 + b_2\upsilon_2^2 + b_3\upsilon_3^2 + b_4\upsilon_4^2 + b_5$$

At this juncture, it is important to offer the theoretical interpretations of these reduced form parameters, in terms of their signs and magnitudes, as these would guide the empirical discussions. The signs and magnitudes of the π coefficients derive from the signs and magnitudes of the loss functions weights, the a's and b's and the constraint equations parameters, the μ's, γ's, υ's and λ's. For example, since expansionary fiscal policy has a positive influence on output and inflation growth, a reduction in the fiscal balance[3], S_t, would increase output growth and inflation. In that case, $\pi_{11} < 0$ and $\pi_{12} < 0$. Also, the rate of money

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[3] This will depend on the fiscal policy measure adopted. Adopting public expenditure will yield a positive relationship between fiscal policy and output growth.

stock growth would fall as output and inflation rises. Then, the following holds: $\pi_{21}<0$, and $\pi_{22}<0$. But, one should be mindful of how the values of the structural parameters affect the interpretation of results. As noted by Bradley and Potter (1986), the response of fiscal policy to inflation (π_{12}) could be zero either because the fiscal authority has little concern about inflation ($a_2=0$), or because the structure of the economy does not permit contractionary fiscal policy response to produce the desired outcome ($\mu_2=0$). Theoretically, as oil price rises, fiscal balance should rise as government revenue is boosted, while money stock growth is expected to fall to keep inflation in check. In which case, $\pi_{14}>0$ and $\pi_{24}<0$. Also, an improvement in the fiscal balance would enhance the BOP position, meaning that $\pi_{13}>0$. In like manner, money stock growth will react to changes in the BOP positively. That is, as BOP falls money supply growth reduces, and vice versa. Hence, $\pi_{23}>0$.

The signs and magnitude of the reduced form coefficients of monetary and fiscal policy measures indicate the extent of coordination between the government and the central bank. Fiscal and monetary policies are said to be coordinated in this regard, when the two policy instruments are positively related, all things being equal. Of course depending on the state of the economy, the thinking is that one policy should realize the direction of the other and react accordingly in a complementary fashion. For example, an increase in the level of money stock raises output growth and therefore inflation, thus reducing the need for an expansionary fiscal policy intended to achieve output growth. In effect, the fiscal balance would increase, or at least remain unchanged, as money stock growth increases. Similarly, a reduction in the fiscal balance, an expansionary fiscal policy stance, would increase output and inflation, and hence reduce the need for an increase in money growth. It therefore follows that money growth should fall, or remain unchanged, as fiscal balance falls. So, in a theoretical sense, one should expect $\pi_{15}>0$ and $\pi_{25}\geq0$. However, the sign of the coefficients would depend on the fiscal

measure. For example, the foregoing holds when the overall fiscal balance is the measure of fiscal stance. Applying public expenditure would imply a negative relationship between fiscal and monetary policies. This is because an increase in money growth would suggest a reduction in public expenditure for policy coordination to hold.

The interaction between the fiscal and monetary authorities is often cast as a game, which characterizes a situation of potential conflict and cooperation in which the eventual outcome depends not just on the individual policymaker's decisions, but also on the actions of the other. By a game, is meant representation of a situation in which a number of individuals interact in a setting of strategic interdependence (Mas–colell, Winston and Green, 1995). Both policymakers can be said to play a cooperative or non-cooperative game depending on their levels of communication and commitment to achieving their agreed targets. By cooperative or coordination game, it is meant that the policymakers are able to commit themselves to binding agreements before their strategies are implemented. Here, their interests are assumed to be neither completely opposed nor completely coincident. According to Nash (1953), cooperative conveys the meaning that the two policy makers are supposed to be able to discuss a situation and agree on a rational joint plan of action, an agreement that should be enforceable. However, in a non-cooperative game, there is complete absence of pre-commitment and players have unrestricted discretion in choosing their strategies (Blackburn and Christensen, 1989). Under this non-cooperative arrangement, each player acts independently without collaboration or communication with each other (Nash, 1951). This means that players do not negotiate a common course of action (Haurie and Krawczyk, 2000). Also, both policymakers do not discuss policy, they do not agree on a joint strategy and cannot make firm or credible commitments (Kishan and Opiela, 2000). In which case, the coefficients on each other's policy variable are insignificant and effectively zero. That is, $\pi_{15}=\pi_{25}=0$.

The two foremost studied cases of non-cooperative games are the Nash and the Stackelberg behaviour. In the Nash game, equal status is assumed for each player. Each chooses its strategies taking as given the strategies of the other. There is Nash equilibrium when there is no incentive for each player to deviate unilaterally from the outcome of the game. In other words, each player's action is optimal irrespective of what the rival does. This solution concept applies to a situation in which there is absence of pre-commitment and guarantees that optimal strategies are time consistent. On the other hand, the Stackelberg game characterizes a situation in a two-person setting, in which one player assumes a leadership role, while the other follows.

Kishan and Opiela (2000) offer another interpretation of the interaction between the fiscal and monetary authorities, considering the cooperative case as one of implicit and explicit coordination. In the implicit case, which can be likened to the Stackelberg game, one policymaker dominates, while the other voluntary follows. This may occur where there is no formal institutional arrangement or mechanisms for coordination of policies, such as a coordination committee or a fiscal rule. Under this circumstance, one policymaker may attempt to play a leading role in the hope that the other would follow in a cooperative manner. Usually, the fiscal authority is observed to occupy the leading position since it is more established than the monetary authority. Indeed, the monetary authority for a long time was considered as an agent of the fiscal authority. The practice is that the fiscal authority would set policy based on its own preferences and then count on the monetary authority to play an accommodating role. Here, policy outcomes are often undesirable in so far as they tend to be consistent with fiscal authorities' preferences. In the context of the reaction function formulations, monetary policy would of course respond to fiscal policy, while fiscal policy in turn would not respond to monetary policy. The sign of the coefficients of the monetary and fiscal variables would

determine the nature of the relationship. Adopting overall fiscal balance as a measure of fiscal policy, fiscal dominance, or monetary accommodation would occur when the coefficient of money stock growth in the fiscal model is negative and significant, whereas it would be positive when public expenditure is used. Similarly, monetary dominance results when the coefficient of overall fiscal balance in the monetary model is negative and significant.

In contrast, it is quite possible that the monetary authority plays a leading role, especially in an era of enhanced central bank autonomy. For example, the monetary authority may decide to set a policy rule and thus gain credibility over time by simply adhering to this fixed rule. The fiscal authority being less powerful would tend to follow the monetary authority. But, whether it would continue to do this depends on two things: (1) its belief about the credibility of the monetary authority in committing to the rule, and (2) its ability to compel the monetary authority to abandon the rule. Cooperation with monetary leadership entails that fiscal policy is responsive to monetary policy, while monetary policy may not respond to fiscal policy. In which case, the coefficient of fiscal policy in the monetary model would be negative ($\pi_{25}<0$) and that of monetary policy in the fiscal model would be zero ($\pi_{15}=0$). In contrast to the implicit case, both policymakers may decide to cooperate by explicitly negotiating policies, as commonly observed in inflation targeting regimes, which involves designing inflation contracts. This arrangement often compels both policymakers to follow a balanced policy mix capable of achieving their respective goals. Table 4.1 summarizes the alternative nature of relationships, and the expected policy outcomes.

Table 4.1: Summary of Alternative Fiscal and Monetary Policy Relationships

s/n	Nature of Relationship	Expected sign of π	Expected Policy Outcome
1	Non-coordination	$\pi_{15}>0$, $\pi_{25}<0$ or $\pi_{15}<0$, $\pi_{25}>0$	Inferior for both fiscal and monetary policies
2	Coordination with Fiscal Dominance	$\pi_{15}>0$, $\pi_{25}\geq0$	Inferior for monetary policy

3	Coordination with Monetary Dominance	$\pi_{15} \geq 0, \pi_{25} > 0$	Inferior for fiscal policy
4	Coordination	$\pi_{15} > 0, \pi_{25} > 0$	Superior for both fiscal and monetary policies

4.3   METHODOLOGY

Having examined the theoretical framework, methodological issues relating to the empirical model, the variables and estimation technique, are discussed next.

4.3.1   The Model and Estimation Technique

The empirical models to be estimated include equations 4.12 and 4.13 below, which are slightly modified versions of 4.10 and 4.11 by including the lagged values of the endogenous variables as independent variables to take care of the lags in policymaking and implementation, particularly with respect to tax legislation and spending.

$$S_t = \pi_{10} + \pi_{11}GDP_t + \pi_{12}INFL_t + \pi_{13}BOP_t + \pi_{14}OILP_t + \pi_{15}M_t + S_{t-1} + \tau_{1t} \ldots\ldots\ldots\ldots 4.12$$

$$M_t = \pi_{20} + \pi_{21}GDP_t + \pi_{22}INFL_t + \pi_{23}BoP_t + \pi_{24}OILP_t + \pi_{25}S_t + M_{t-1} + \tau_{2t} \ldots\ldots\ldots\ldots 4.13$$

Where τ_{1t} and τ_{2t} are errors terms.

With respect to the estimation technique, at first thought, the Ordinary Least Squares Technique (OLS) would seem the most obvious. But, since the empirical model is a simultaneous equation system, the OLS technique is no longer applicable because of simultaneity bias. As the equations show, M_t and S_t are jointly determined, in that M_t appears in equation 4.12 in which S_t is the dependent variable, while at the same time, S_t appears in equation 4.13 in which M_t is the dependent variable. Under this situation, applying the OLS technique would generally produce parameter estimates that are bias and inconsistent, and hence the results would not offer any meaningful economic interpretations.

In empirical research, the leading method for estimating simultaneous equation models is the Instrumental Variable Techniques (IVs). Among the class of IVs, the preferred estimation technique for this study is the Two Stage Least Squares (TSLS), which is second in popularity only to the OLS for the estimation of linear equations. It is simple to apply and appropriate for the study. The estimates of this technique are consistent and asymptotically efficient. Also, the output is typically similar to those generated by the OLS technique. However, for the purpose of empirical estimation, one must be sure that the system of equation is identified. The identification of a model is a very important issue, particularly in connection with simultaneous equations systems. Theory suggests two rules for model identification: order condition and rank condition. While the order condition is necessary but insufficient, the rank condition is both necessary and sufficient. In sum, the rank condition tells us whether the equation under consideration is identified or not, whereas the order condition tells us if it is exactly identified or over identified (Gujarati and Porter, 2009). In view of the practical difficulties associated with determining the rank condition in large scale models, Harvey (1990) observes that the order condition is usually sufficient to ensure identification. However, Harvey further notes while it is important to be aware of the rank condition, a failure to verify it will rarely result in a disaster. In order words, the order condition is generally adequate to ensure model identification.

The application of the TSLS is straightforward. It is a two-stage procedure, which simply involves the application of the OLS technique twice. First, the reduced form equations 4.12 and 4.13 are estimated using the OLS technique from which the expected values of the two endogenous variables, S_t and M_t are obtained. Then, replacing the actual values with the expected values, the second stage involves estimating all the structural equations. In sum, this technique is a Generalized IV technique in which the expected values

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of the endogenous variables are obtained by using all predetermined variables as instruments (Iyoha, 2004). However, prior to estimation the study would perform preliminary analysis of the data, including unit root and cointegration tests to ensure suitability of data and existence of long run relationship among the variables. The Statistical package used for estimation is E-views 5.1.

4.3.2 **The variables and their definitions**

In the empirical literature, the conventional practice is to adopt one fiscal policy measure or instrument in combination with one or two monetary policy measures, as explanatory variables. In this respect, this study however, differs in that alternative policy variable definitions are used. On the fiscal side, four variables are applied, namely, Public Expenditure (PE), Overall Fiscal Balance (OFB) and their cyclically adjusted counterparts, that is, Cyclically Adjusted Public Expenditure (CAPE) and Cyclically Adjusted Overall Fiscal Balance (CAOFB). It is widely acknowledged that the overall and primary fiscal balances, in particular, may not adequately capture the fiscal policy stance as they are endogenous to the evolution of economic activity. The thinking is that observing changes in fiscal balances alone as an indicator of discretionary fiscal policy may yield misleading results for the simple reason that fiscal balances are not only influenced by government decisions alone but also by influences beyond government direct control. Thus, cyclical adjustments are performed to filter the impact of cyclical movements in fiscal variables to uncover the underlying fiscal stance (Fedelino, Ivanova and Horton, 2009). In the process, one can assess the impact of automatic stabilizers on the economy. In Nigeria, estimates of the cyclically adjusted components of the relevant fiscal variables are not available. Hence, they would first be estimated using observed data before empirical estimation of the model.

Meanwhile, the monetary policy variables adopted are money supply growth rate and interest rate.

In empirical form, the variables of the model are as follows:

S_t = Public Expenditure (PE), Cyclically Adjusted Public Expenditure (CAPE), Overall Fiscal Balance (OFB) and Cyclically Adjusted Overall Fiscal Balance (CAOFB) all expressed in Billions of Naira;

M_t = Broad Money Growth Rate (M2G) and Monetary Policy Rate (MPR)

GDP_t = Real Gross Domestic Product Growth (per cent)

$INFL_t$ = Inflation rate (per cent)

BOP_t = Balance of Payment (₦'Billion)

$OILP_t$ = Average spot price of Nigeria's reference crude, the Bonny Light (US$)

S_{t-1} = One period lag of PE, CAPE, OFB and CAOFB

M_{t-1} = One period lag of M2G and MPR

4.3.3 Estimating Cyclically Adjusted Fiscal Balances

Performing cyclical adjustments on fiscal variables, with emphasis on the overall fiscal balance is not a straightforward exercise. Indeed, it has been somewhat challenging in the literature because one must first estimate the economy's potential output and the associated output gap. Unfortunately, as observed by Brunila, Hukkinen and Tujula (1999), and many others, gap estimates and hence the cyclically adjusted fiscal balance results are subject to considerable uncertainty arising from the fact that all the methods used in the literature have major shortcomings. Findings from this study, however, suggest that if the main interest is to analyze changes in fiscal policy stance from year to year or assess the proper policy mix, there is not much difference in the results produced by the various

methods. De Brouwer (1998) makes a similar point, noting that although the estimates of output gap vary with the method used, changes in model specification and sample period, the broad profile of the gap is similar across methods.

Some of the popularly applied techniques include the Linear Trend (LT) Method, Hodrick-Prescott (HP) Filter, the Multivariate HP method, the Unobservable Components Method using the Kalman Filter, Production Function Approach, the Structural Vector Autoregression (SVAR) Method and the Baxter-King Method using Band-Pass (BP) Filter. However, estimating the potential output for the Nigerian economy, Adamu, Iyoha and Kouassi (2009), follow three approaches, namely, the Linear Trend Method, Hodrick-Prescott Filter and Structural VAR. Using both quarterly and annual data, from 1980 - 2008, the paper finds that the LT method outperforms the HP and SVAR methods. In particular, LT estimates characterize the behaviour of actual output over the sample period. Concluding, however, the paper called for caution on the use of their estimates for policy purposes owing to the considerable uncertainty surrounding potential output measurement. In the light of the foregoing, this study would focus on the LT method. Although purely statistical in nature, three things count to its advantage: simplicity, parsimony and data availability. The major drawbacks, however, are its mechanical nature and lack of theoretical support.

To estimate the potential output using the LT method, a linear equation relating output to a time trend is estimated. Then, the implied output gap, defined as the difference between actual and potential output is obtained over the sample period. Finally, the gap estimates are used to compute the cyclical components of the fiscal balances in the following manner. First, the cyclical components of government revenue and expenditure are estimated using equations 4.14 and 4.15.

$$GR_t^C = \alpha_{GR} * gap_t \ \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots 4.14$$

$$PE_t^C = \delta_{PE} * gap_t \ \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots 4.15$$

Where, GR_t^C and PE_t^C are the cyclical components of federal government revenue and expenditure, respectively, GR_t and PE_t are their actual values, while α_{GR} and δ_{PE} are their respective elasticities with respect to changes in output gap. Equations 4.16 and 4.17 are the linear regression models in log terms, which directly provide estimates of elasticities.

$$Log(GR/GR^T) = \alpha_0 + \alpha_{GR} \ Log(GDP/GDP^T) \ \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots 4.16$$
$$Log(PE/PE^T) = \delta_0 + \delta_{PE} Log(GDP/GDP^T) \ \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots 4.17$$

Here, GR^T and PE^T are the potential levels of federal government revenue and expenditure, respectively. Overall, the elasticities measure, on average, the sensitivity of revenue and expenditure to the economic cycle. Finally, to arrive at the cyclically adjusted fiscal measures, the respective cyclical components are subtracted from their actual values, as equations 4.18–20 show.

$$CAGR = GR^{CA} = GR_t - GR_t^C \ \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots 4.18$$
$$CAPE = PE^{CA} = PE_t - PE_t^C \ \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots 4.19$$
$$CAOFB = CAGR - CAPE \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots 4.20$$

where CAGR represents the cyclically adjusted government revenue, while the other variables remain as previously defined.

4.4   DATA AND THEIR SOURCES

Annual data covering the period 1980–2009 are used for the empirical analyses, the main source being the Central Bank of Nigeria Statistical Bulletin, the 50 years Special Anniversary Edition. This is supplemented with the Statistical Bulletin, Volume 16, December 2005, and Annual Report and Statement of Accounts of the Bank for various years.

Additional data were also obtained from the Revised 2009 Gross Domestic Product for Nigeria and Estimates for Q1–Q3 published in November 2010 by the National Bureau of Statistics (NBS) of Nigeria

CHAPTER FIVE

EMPIRICAL ANALYSES AND DISCUSSION OF RESULTS

5.1   INTRODUCTION

The discussions in this Chapter centre on the empirical aspects of the study. The results provide insights into the extent of policy coordination between the government and the Central Bank of Nigeria during the reference period, covering 1980–2009. The empirical analyses are carried for the full sample period, 1980–2009, and two sub-periods, 1980–1999 and 2000–2009.   As a preliminary to the main analyses, the Chapter commences with the discussion of time series properties of data applied and the results of the adjustments performed preparatory to model estimation. In particular, to be sure that the data are free of noise and amenable to empirical application, the study performs stationarity test, cointegration test and other statistical checks. Accordingly, section 5.2 undertakes preliminary analyses of the data, Section 5.3 presents the estimates of potential output, potential government revenue, potential public expenditure, their corresponding gap estimates and cyclical adjusted balances, while 5.4 discusses the main empirical results. The final section highlights the major empirical findings and their policy implications.

5.2   PRELIMINARY ANAYSES OF DATA

This section is in three parts: trend analyses of time series data, pair-wise correlation analyses of variables and discussion of the estimates of potential output, potential government revenue, potential public expenditure and the associated gap estimates.

5.2.1   Trend Analyses of Data Series

Using data from the Central Bank of Nigeria, Figures 5.1– 5.6 present the time series plots of the variables, which illustrate their behaviours over the sample period, 1980 – 2009. Over the period, the real growth rate of the Gross Domestic Product, denoted by GDPG, averaged 3.1% with the highest of 10.2% in 2003 and lowest of -8.5% in 1984. Indeed, as Figure 5.1 further reveals, GDP growth was negative throughout 1981–1984. It picked up in 1987 from 1.2% rising to 8.3% in 1990 after which it declined to as low as 1.3% in 1994. During the 1990s, another era of slow growth, it hovered between 4.7% and 1.3%. However, since 2000, GDPG has picked up again and has averaged about 6.5%. Provisional estimates by the National Bureau of Statistics show that real GDP growth would hit 7.85% in 2010.

Broad Money Growth, M2G, on average, has grown by 27.5% over the period. While it stood at as low as 3.5% in 1989, it reached an all time peak of 57.8% in 2008. As Figure 5.2 illustrates, M2G is observed to have been low and below the 10% point in three other periods, 1981, 1986 and 2003, when it stood at 7.0%, 4.2% and 9.8%. On the other hand, apart from the 57.8% peak of 2008, it has also been high on a number of occasions, 47.4% in 1980, 35.0% in 1988, 53.8% in 1993 and 48.1% in 2000.

The inflation rate, year-on-year, has been high in Nigeria with an average of 21% during the period. It was lowest in 1986 and highest in 1995 standing at 5.4% and 72.8%, respectively. Inflation rate was rather highly unstable between 1980 and 1995 than from 1996 to 2009. In other words, it rose and fell rapidly during the early periods than is observed in recent times. In particular, it has been relatively low and stable from 1997. The period of 1992 to 1995 could easily be classified as the worse periods of Nigeria's inflation history when within 5 years it consistently rose from 7.5% in 1990 to reach 72.8% in 1995.

Indeed, inflation rate was 44.5%, 57.2%, and 57.0% in 1992, 1993 and 1994, respectively. Figure 5.3 reveals that similar behaviour was exhibited between 1986 and 1989.

Depicted in Figure 5.4 is Nigeria's overall balance position over the period. Apparently, the BOP has been far more in deficits than in surplus depicting the import dependent nature of the economy. On the average, the BOP stood at a surplus of ₦86,734.3m over the period. However, while the largest surplus ever recorded seem to be the ₦1,821.2b recorded in 2006, it stood at its worst position of ₦-1,548.4b in 2009. Noticeably, the BOP was in surplus and growing from 2004 until 2009.

Over the period, the average price of Nigeria's reference crude, the Bonny Light, ranged between $12.8 per barrel and $101.2 per barrel exhibiting the regular feature of oil price cycles. As can be seen in Figure 5.5, the average oil price fell consecutively from $38.8 in 1980 to $14.2 in 1986. It was low between 1993 and 1995 before jumping from all time low of $12.8 in 1998 to $71.8 in 1999. It crashed to $26.1 the following year and then rose steadily to an average of $101 2008 in 2008. In 2009, it stood at $62.1on average.

The overall fiscal balance, OFB, in absolute terms, has virtually been in the negative territory throughout the period, signifying that public expenditure far exceeded government revenue. Over the period, this indicator of government fiscal stance was only in surplus on two occasions, 1995 and 1996, when it stood at ₦1,000m and ₦32,049.4m, respectively. Noticeably, the OFB has been high in recent times, specifically from 1998 reaching a deficit of ₦810b in 2009.

Fig 5.1: Real GDP Growth, 1980 - 2009
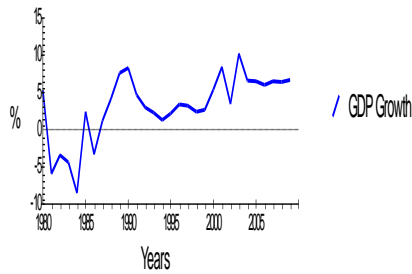
Fig 5.2: Broad Money Growth, 1980 - 2009
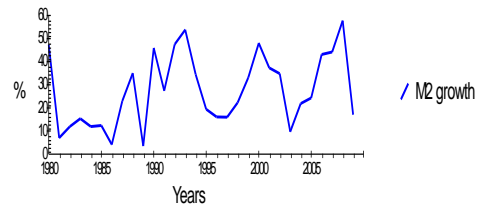
Fig 5.3: Inflation Rate, 1980-2009
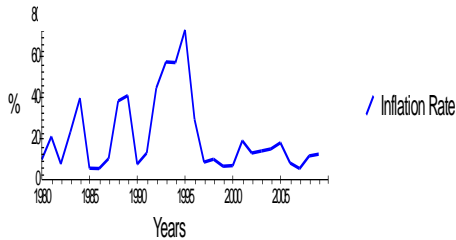
Fig 5.4: Balance of Payment, 1980 - 2009
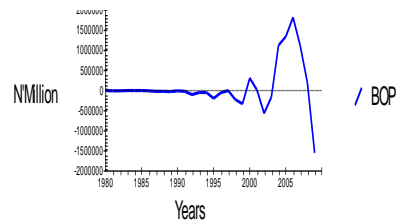
Fig 5.5: Average Spot Price of Bonny Light, 1980 - 2009
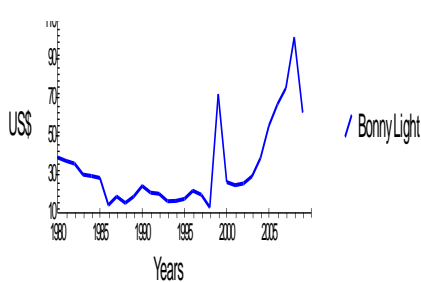
Fig 5.6: Overall Fiscal Balance, 1980 - 2009
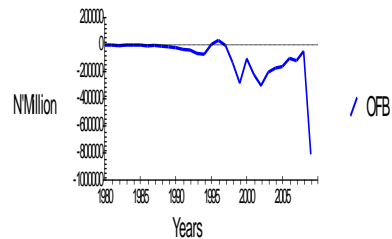
5.2.2 Pair-wise Correlation Analyses

This section examines the degree of association between the variables of the model, using the correlation coefficient, r, as the descriptive tool. To this end, Tables 5.1–5.4 present the estimated partial correlation coefficients in matrix format. Examining such matrices is often a useful exercise, as it offers a first glance at the data before engaging in estimations in full scale. Importantly, the correlation coefficients provide guidance in assessing the presence and severity of multicollinearity among the independent variables.

As the Tables show, the main diagonal of each matrix contains 1's, signifying the correlation between a variable and itself, while the other elements show the correlation between any two pairs of variables. It should be noted that the elements of the

upper half of the matrices are the exact replicas of the elements of the lower half. There is really no need for repetitions. Hence, the empty spaces observed. In terms of sign, positive values indicate that any two variables under examination move in the same direction, and thus are positively correlated. In contrast, negative values suggest that the variables move in the opposite direction. Also, the greater the coefficient the stronger the degree of association and vice versa.

Table 5.1: **Estimated Correlation Matrix, Dependent Variables PE and M2G**

	PE	M2G	GDPG	INFL	BOP	OILP
PE	1.0000					
M2G	0.2861	1.0000				
GDPG	0.4911	0.4158	1.0000			
INF	-0.3144	0.0178	-0.1803	1.0000		
BOP	0.1590	0.2287	0.1610	-0.1530	1.0000	
OILP	0.8120	0.3304	0.2324	-0.3933	0.2984	1.0000

Note: $-1 \leq r \leq 1$

Adopting Public Expenditure, PE, and Broad Money Growth, M2G, as dependent variables, Table 5.1 shows that the partial correlation coefficients are below 0.5, excepting the one relating to PE and OILP, which is 0.8. The apparent high correlation between PE and OILP implies that both variables tend to move together strongly. Overall, the estimates do not show any concern for multicollinearity. Interpreting the estimates, however, the concern is the relationship between the dependent variables and the independent variables. It is easily seen that, other things being equal, M2G is positively related to all the variables, including PE. However, PE is negative related to INFL and positively related to the others. The association between PE and BOP seems to be weak. The same applies to the association of M2G with INFL and BOP. Table 5.2, which deploys the Cyclically Adjusted Public Expenditure, CAPE, and M2G as dependent variables reveals broadly similar picture.

Table 5.2: Estimated Correlation Matrix of Variables, Dependent Variables, CAPE and M2G

	CAPE	M2G	GDPG	INFL	BOP	OILP
CAPE	1.0000					
M2G	0.3000	1.0000				
GDPG	0.5091	0.4158	1.0000			
INF	-0.3105	0.0174	-0.1803	1.0000		
BOP	0.1553	0.2287	0.1610	0.1530	1.0000	
OILP	0.8036	0.3304	0.2324	-0.3933	0.2984	1.0000

Note: $-1 \leq r \leq 1$

Table 5.3: Estimated Correlation Matrix, Dependent Variables, OFB and M2G

	OFB	M2G	GDPG	INFL	BOP	OILP
OFB	1.0000					
M2G	-0.0231	1.0000				
GDPG	-0.3538	0.4158	1.0000			
INF	0.2175	0.0174	-0.1803	1.0000		
BOP	0.3783	0.2287	0.1610	-0.1530	1.0000	
OILP	-0.3602	0.3304	0.2324	-0.3933	0.2984	1.0000

Note: $-1 \leq r \leq 1$

Table 5.3 presents the estimates of the partial correlation coefficients in which Overall Fiscal Balance, OFB, and Broad Money growth are considered as dependent variables, while Table 5.4 has the Cyclically Adjusted Overall Fiscal Balance, CAOFB and M2G as the dependent variables. In contrast to the earlier observation, OFB is negatively associated with M2G, GDPG and OILP, whereas it is positively associated with INFL and BOP. On the other hand, M2G is positively related to all the variables, excepting OFB. Besides, CAOFB is negatively related to GDPG and OILP and positively to M2G, INFL and BOP.

Table 5.4: Estimated Correlation Matrix, Dependent Variables, CAOFB and M2G

	CAOFB	M2G	GDPG	INFL	BOP	OILP
CAOFB	1.0000					
M2G	0.0335	1.0000				
GDPG	-0.3378	0.4158	1.0000			
INF	0.2619	0.0174	-0.1803	1.0000		
BOP	0.3670	0.2287	0.1610	-0.1530	1.0000	
OILP	-0.3798	0.3304	0.2324	-0.3933	0.2984	1.0000

Note: $-1 \leq r \leq 1$

5.2.3 **Unit Root Test Results**

Tables 5.5 and 5.6 illustrate the results of the unit root tests performed in levels and first differences on each variable using the Dickey Fuller (DF) and the augmented Dickey Fuller (ADF) Tests. It is based on the null hypothesis that the time series under consideration has a unit root, that is, it is non-stationary, against the alternative of absence of a unit root. To reject the null hypothesis of the presence of a unit root, the computed test statistics are compared with their critical values. In the event that the computed statistic exceeds the critical value, the null hypothesis is rejected and is therefore concluded that the variable concerned is stationary.

The purpose of subjecting each time series to a unit root analysis is to avoid the spurious regression problem, which occurs when a nonstationary time series is regressed on one or more nonstationary time series. The approach is to first test for the presence of unit roots in the time series data in their levels. If the null hypothesis is not rejected, then the study proceeds to conduct further test in first differences. In the tables, the estimates of the regression results are in two parts: the first part includes an intercept but not a trend, while the second set of results includes both an intercept and a linear trend.

Table 5.5: Unit Root Test Results in Levels

	*Test Statistic		95% Critical Value of the ADF	No. of ADF Lag	**Test Statistic		95% Critical Value of the ADF	No. of ADF Lag	Stationarity Status
	DF	ADF			DF	ADF			
PE	3.9768	6.1913	-2.9706	1	1.0248	3.5239	-3.5796	1	✓
CAPE	3.6174	5.5720	-2.9706	1	0.8357	3.0230	-3.5796	1	✓
OFB	-1.0270	0.2775	-2.9706	1	-3.0819	-2.0212	-3.5796	1	
CAOFB	-0.9644	-0.4118	-2.9706	1	-3.0215	-2.3250	-3.5796	1	
M2G	-3.5922	-2.6165	-2.9706	1	-3.8448	-2.9476	-3.5796	1	
GDPG	-3.5779	-2.9281	-2.9706	1	-3.5556	-3.8038	-3.5796	3	✓
INFL	-2.6020	-3.0486	-2.9706	1	-2.7848	-3.2741	-3.5796	1	✓
BOP	-3.5436	-3.4937	-2.9706	1	-3.6531	-3.7835	-3.5796	1	✓
OILP	-2.0497	-0.7209	-2.9706	1	-3.0688	-1.7316	-3.5796	1	

* includes an intercept but not a trend, ** includes an intercept and a linear trend,

✓ - Stationary, X - Non-stationary

Examining Table 5.5, which relates to the test results in levels, it is easy to see that using ADF as basis, four variables, OFB, CAOFB, M2G and OILP, are found to be nonstationary. Consequently, all the data series were transformed and again subjected to test using their first differences, as shown in Table 5.6. The results show that all of them are first difference stationary considering that the null hypothesis of the presence of unit roots are all rejected.

Table 5.6: Unit Root Test Results in First Difference

	*Test Statistic		95% Critical Value of the ADF	No. of ADF Lag	**Test Statistic		95% Critical Value of the ADF	No. of ADF Lag	Stationarity Status
	DF	ADF			DF	ADF			
DPE	-3.8180	6.3193	-3.0522	10	-6.0037	-2.9987	-3.7119	1	✓
DCAPE	-4.0030	3.1224	-3.0522	10	-5.8743	-2.8134	-3.7119	1	✓
DOFB	-5.0303	-3.0774	-2.9750	1	-4.9895	-3.1000	-3.5867	1	✓
DCAOFB	-3.3868	-2.3329	-2.9750	1	-3.1999	-5.8061	-3.6592	8	✓
DM2G	-7.1723	-4.2151	-2.9750	1	-7.0291	-4.0125	-3.5867	1	✓
DGDPG	-8.7965	-5.0347	-2.9750	1	-8.7296	-4.9836	-3.5867	1	✓
DINFL	-4.9942	-5.0775	-2.9750	1	-4.9272	-5.0636	-3.5867	1	✓
DBOP	-1.7287	-5.1411	-.9907	4	-1.7749	-5.5080	-3.6119	1	✓
DOILP	-7.4518	-4.6531	-2.9750	1	-7.7158	-5.2386	-3.5867	1	✓

* includes an intercept but not a trend, ** includes an intercept and a linear trend,
✓ - Stationary, X - Non-stationary

5.2.4 Cointegration Test Results

Having established the stationarity status of the time series, the next step is to conduct a cointegration test to enable us uncover the nature of the relationship that exits among the variables. The essence is to be sure that the variables have a meaningful long run relationship. In this regard, Tables 5.7–5.10 present the results of the multivariate Johansen and Juselius procedure for cointegration relating to the four models to be estimated. As the Tables indicate, the test is in two parts: Maximal Eigenvalue and Trace Test. The tests are based on the null hypothesis that the variables under consideration have at least a specified number of cointegrating vectors against their respective alternatives. To reject the null

hypothesis and conclude that the alternative holds, the computed statistic must exceed the corresponding critical value. It is important to mention that the interest is on finding at least one cointegrating vector.

Adopting PE as the dependent variable and GDPG, INFL, BOP, OILP as dependent variables, Table 5.7 shows the cointegration test results. Comparing the computed statistics and their corresponding critical values, it is observed that according to the Maximal Eigenvalue Test, there is one cointegrating vector, while the Trace test tells us that there are as many as three. Overall, it is concluded that there is at least one cointegrating vector.

Table 5.7: Cointegration Test Results Based on Maximal Eigenvalue and Trace of the Stochastic Matrix, including PE, GDPG, INFL, BOP, OILP and M2G in the Cointegrating Vector

Maximal Eigenvalue				Trace			
H0	H1	Test Statistic	95% critical Value	H0	H1	Test Statistic	95% critical Value
r=0	r=1	45.5489	39.8300	r=0	r>=1	120.0319	95.8700
r<=1	r=2	24.2533	33.6400	r<=1	r>=2	74.4829	70.4900
r<=2	r=3	20.9871	27.4200	r<=2	r>=3	50.2296	48.800
r<=3	r=4	18.3509	21.1200	r<=3	r>=4	29.2425	31.5400
r<=4	r=5	6.7760	14.8800	r<=4	r>=5	10.8918	17.8600
r<=5	r=6	4.1158	8.0700	r<=5	r>=6	4.1158	8.0700

Note: Cointegration has unrestricted intercepts but no trends in the VAR

Similarly, using CAPE as the dependent variable, while the independent variables remain the same, Table 5.8 shows that the Maximal Eigenvalue Test produces one cointegrating vector, whereas the Trace test says they are two. Again, it is concluded that, at least there is one cointegrating vector.

Table 5.8: Cointegration Test Results Based on Maximal Eigenvalue and Trace of the Stochastic Matrix, including CAPE, GDPG, INFL, BOP, OILP and M2G in the Cointegrating Vector

Maximal Eigenvalue				Trace			
0	H1	Test Statistic	95% critical Value	H0	H1	Test Statistic	95% critical Value

r=0	r=1	49.6970	39.8300	r=0	r>=1	122.0709	95.8700
r<=1	r=2	25.0093	33.6400	r<=1	r>=2	72.3738	70.4900
r<=2	r=3	18.7049	27.4200	r<=2	r>=3	47.3645	48.8800
r<=3	r=4	18.6479	21.1200	r<=3	r>=4	28.6596	31.5400
r<=4	r=5	6.0498	14.8800	r<=4	r>=5	10.0117	17.8600
r<=5	r=6	3.9619	8.0700	r<=5	r>=6	3.9619	8.0700

Note: Cointegration has unrestricted intercepts but no trends in the VAR

Proceeding to Table 5.9, which specifies the nature of the relationship between OFB and the independent variables, one can also observe that the Maximal Eigenvalue test reveals one cointegrating vector, while the Trace Test shows two, implying that at least there is one cointegrating vector. In relation to CAOFB, Table 5.10 shows similar results.

Table 5.9: Cointegration Test Results Based on Maximal Eigenvalue and Trace of the Stochastic Matrix, including OFB, GDPG, INFL, BOP, OILP and M2G in the Cointegrating Vector

Maximal Eigenvalue				Trace			
H0	H1	Test Statistic	95% critical Value	H0	H1	Test Statistic	95% critical Value
r=0	r=1	54.1486	39.8300	r=0	r>=1	134.1702	95.8700
r<=1	r=2	33.5180	33.6400	r<=1	r>=2	80.0216	70.4900
r<=2	r=3	22.0341	27.4200	r<=2	r>=3	46.5036	48.8800
r<=3	r=4	18.3952	21.1200	r<=3	r>=4	24.4695	31.5400
r<=4	r=5	4.3952	14.8800	r<=4	r>=5	6.0378	17.8600
r<=5	r=6	1.6427	8.0700	r<=5	r>=6	1.6427	8.0700

Note: Cointegration has unrestricted intercepts but no trends in the VAR

In sum, the cointegration test shows that there is a least one cointegrating vector among the variables of the four models to be estimated implying the existence of long-run relationship.

Table 5.10: Cointegration Test Results Based on Maximal Eigenvalue and Trace of the Stochastic Matrix, including CAOFB, GDPG, INFL, BOP, OILP and M2G in the Cointegrating Vector

Maximal Eigenvalue				Trace			
H0	H1	Test Statistic	95% critical Value	H0	H1	Test Statistic	95% critical Value
r=0	r=1	51.3136	39.8300	r=0	r>=1	123.1234	95.8700
r<=1	r=2	30.3013	33.6400	r<=1	r>=2	71.8097	70.4900

r<=2	r=3	22.7102	27.4200	r<=2	r>=3	41.5084	48.8800
r<=3	r=4	12.4983	21.1200	r<=3	r>=4	18.7982	31.5400
r<=4	r=5	4.4839	14.8800	r<=4	r>=5	6.2999	17.8600
r<=5	r=6	1.8160	8.0700	r<=5	r>=6	1.8160	8.0700

Note: Cointegration has unrestricted intercepts but no trends in the VAR

5.3   ESTIMATES OF POTENTIAL OUTPUT, GOVERNMENT REVENUE, PUBLIC EXPENDITURE AND CYCLICAL ADJUSTMENTS

5.3.1   Estimates of Potential Output, Potential Revenue, Potential Expenditure and Output Gap

The estimated equations, 5.1–5.3 below relate to potential output, potential revenue, and potential expenditure, respectively, while the Figures following illustrate the relationship between their actual and potential values, including gap estimates. The 't' statistics are in parenthesis. The estimated models show the potential for the economy to grow in terms of revenue generation, spending and output. It should be mentioned that the estimates are required for the purpose of performing cyclical adjustments. So, it may not be important to discuss the results any further.

$$GDP^T = 62764.7 + 17540.5 \text{Trend} \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots5.1$$
$$(2.5346) \quad (12.5748)$$

$$GR^T = -669832.3 + 83287.5 \text{Trend} \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots5.2$$
$$(-3.6674) \quad (8.0955)$$

$$PE^T = -752464.5 + 94775.8 \text{Trend} \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots5.3$$
$$(-3.8510) \quad (8.6111)$$

Actual and Potential GDP, 1980 - 2009

Output Gap, 1980 - 2009

Fig 5.9:

GR) and Potential (GRP) Federal Government Revenue, 1980 - 2009

Fig 10:

Government Revenue Gap, 1980 - 2009

Fig 11:

Actual and Potential Public Expenditure, 1980 - 2009

Fig 12:

Cyclically Adjusted Overrall Fiscal Balance, 1980 - 2009

Fig 13:

Cyclically Adjusted Public Expenditure (CAPE), 1980 - 2009

Fig 14:

Public Expenditure Gap, 1980 - 2009
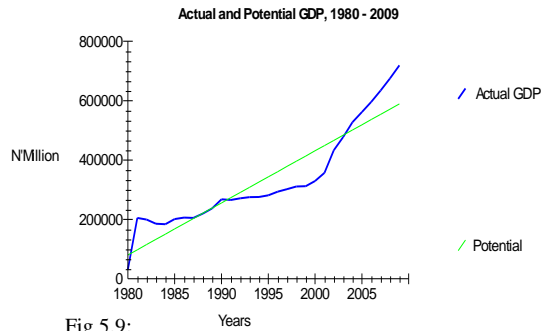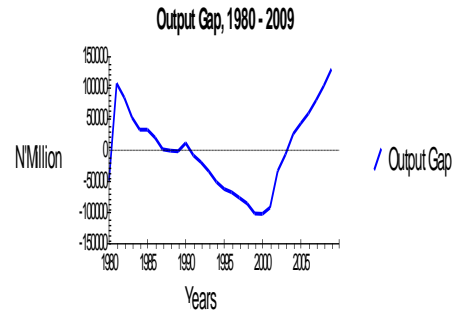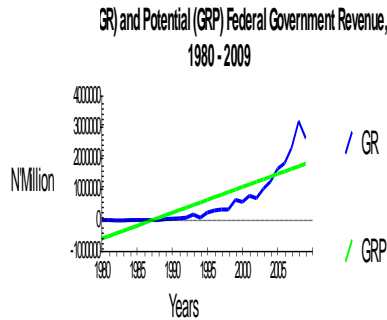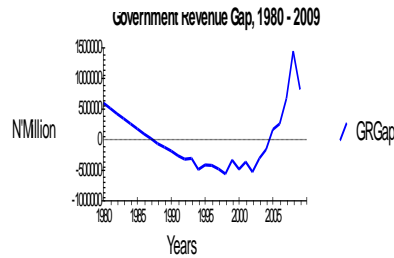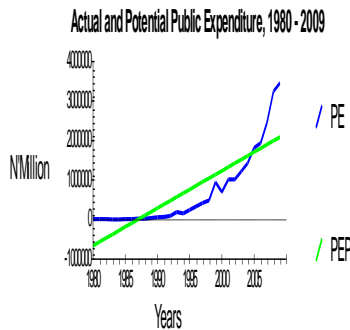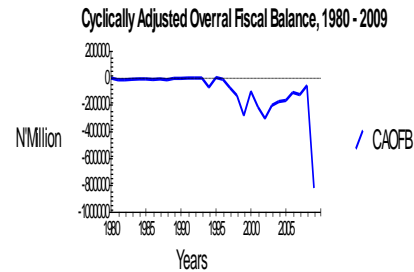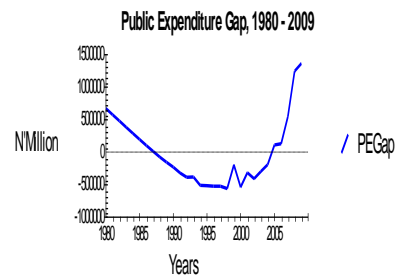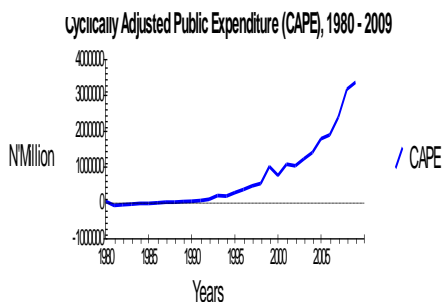
5.3.2   **Estimates of the Sensitivity of Government Revenue and Public Expenditure to the Output Gap**

Equations 5.5 and 5.6 below provide estimates of government revenue and public expenditure elasticities with respect to the output gap. Expressed in logarithm, the coefficients of the respective equations, 0.75 and 0.69, reveal the sensitivity of government revenue and public expenditure to changes in economic activity. By interpretation, a 1%

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increase (decrease) in output leads to 0.75% increase (decrease) in government revenue and 0.69% increase (decrease) in public expenditure. The results suggest that government revenue seems more sensitive to changes in economic fluctuation than public expenditure in Nigeria. This finding is similar to the observation by Gavin and Perotti (1997) for the case of developing countries.

$$LGRR = -0.48497 + 0.75 LGDPR \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots 5.5$$
$$(-4.0452) \quad (1.8130)$$
$$LPER = -0.42785 + 0.69 LGDPR \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots 5.6$$
$$(-3.1866) \quad (1.4804)$$

5.4 PRESENTATION AND DISCUSSION OF THE MAIN RESULTS

In total, four sets of results are produced from the combination of each of the four fiscal variables, namely, PE, CAPE, OFB and COAFB, with the monetary variable, M2G, as the dependent variables, while the independent variables remain the same, as originally specified. Also, each set of results apply to the three different sample periods, 1980–2009, 1980–1999 and 2000–2009. Thus, in reality, there are about twelve sets of results that are discussed, with a table included that summarizes overall findings. Recall that in addition to the money stock, the other selected monetary variable is the interest rate. However, the results obtained applying the latter variable were not meaningful, and have not been included in the discussions.

In general, the empirical interpretations and discussions are aimed at assessing the extent to which the results are consistent with the theoretical propositions of the study. Specifically, the evaluation focuses on the following:

- the theoretical consistency of the estimated coefficients of the models in terms of signs and magnitude;

- the significance of the coefficients;

- the overall significance of the models;

- the extent of systematic monetary and fiscal policy response to economic conditions;

- the patterns of monetary and fiscal policy response. Do they respond to the state of the economy differently?

- are fiscal and monetary policy pro-cyclical or countercyclical;

- are there lagged effect of policies on the economy?;

- any significant role for automatic stabilizers?;

- in the context of policy coordination, what do the results tell us? For the different sample periods, is there any indication of coordination, non-coordination, fiscal dominance and monetary dominance? What are the implications for economic performance?

However, to commence the discussions, there is need to establish the identification status of the empirical models.

5.4.1 **Model Identification**

To achieve identification, the order condition, as indicated earlier, is applied. Let Q denote the total number of variables in a particular equation; k is the number of endogenous variables; and g the total number of variables in the model. Then,

If $g - q = k-1$: the equation is just identified

If $g - q < k-1$: the equation is under identified

If $g - q > k-1$: the equation is over identified

The total number of variables in the model, g, is 8, the number of endogenous variables, k, is 2 and each equation contains a total of 7 variables, q. Then, by the rule, 8–7=2–1, signifying that both equations are just identified and hence the model. Therefore, one can estimate the models using the TSLS technique.

5.4.2 Estimates of Policy Reaction Functions Using Public Expenditure (PE) and Broad Money Supply Growth (M2G) as Policy Variables

Table 5.11 presents estimates of the policy reaction functions for the full sample period, using public expenditure and money stock growth as policy variables. Overall, the explanatory power of the fiscal model is satisfactory given that about 98% of the variations in public expenditure are attributed to the behaviour of the independent variables. However, 32% of the variations in money growth are explained by the behaviour of the independent variables. The estimate of GDPG is significant in both the fiscal and monetary policy reaction functions, although they have the wrong signs. It implies that public expenditure and money stock growth responded to output growth, but in a pro-cyclical manner. That is, public expenditure and money stock increase when the economy grows and decrease when it declines, and are therefore not stabilizing the economy as expected. In particular, this pro-cyclical fiscal policy behaviour is consistent with findings in the empirical literature. It points to difficulties in borrowing in bad times (Gavin and Perotti, 1997), and political pressure to spend during boom periods (Alesina and Perroti, 2006). Kaminsky, Reinhart, and Vegh (2004) trace the roots of debt crisis in emerging markets to high spending and borrowing during boom periods when credit is available in the international market.

Table 5.11 also reveals a fairly strong positive response of public expenditure to oil price movement, considering that the estimate of oil price is significant at the 1% level. In effect, as oil price increases, public expenditure increases as well, and vice versa. This finding

is also consistent with empirical results that in oil-producing countries, fiscal policy has been pro-cyclical. The Nigerian experience show that expansionary fiscal policies that accompanied oil price booms had been destabilizing, and a small reduction in oil prices is capable of generating large financial needs in the future (Villafuerte and Lopez-Murphy, 2010).

Table 5.11: TSLS Estimates of Policy Reaction Functions, using PE and M2G as Policy Variables, 1980 –2009

Independent Variables	Dependent Variables	
	PE	M2G
INPT	-226888.1 67425.1 (-3.3650)*	6.4928 8.9904 (0.7222)
GDPG	16104.8 6657.0 (2.4192)**	1.4345 0.8059 (1.7800)***
INFL	1867.0 1392.4 (1.3409)	0.1359 0.1904 (0.7142)
BOP	-0.0256 0.0404 (-0.6336)	3.85E-06 5.18E-06 (0.7431)
OILP	9720.6 1878.6 (5.1743)*	0.3354 0.2649 (1.2662)
PE	NA	-5.10E-06 6.68E-06 (-0.7634)
M2G	-994.5 1723.4 (-0.5771)	NA
PE(-1)	0.9351 0.0507 (18.4561)*	NA
M2G(-1)	NA	0.1878 0.2358 (0.7963)
R^2	0.98	0.32
SEE	119318.8	14.5
F (6,22)	315.9	1.71
DW	2.36	2.03

 Note: t-statistics is in parenthesis; * significant at the 1% level; ** significant at the
    5% level; *** significant at the 10% level. N.A. –Not Applicable. The figures immediately
    above the t-statistics represent standard errors.

Additional evidence indicates that both fiscal and monetary policy did not respond jointly in addressing inflation and external imbalances during the period, as the estimates of inflation and BOP in both models are not significant at any level. It is also observed that public expenditure has a very significant lag effect on the economy, whereas such hypothesis failed to hold for monetary policy. At 18.4, the size of the t-statistic of the estimate of one-period lagged public expenditure is in fact the largest. This suggests that the impact of public expenditure is felt strongly the year following budget approval. This may not be surprising given the observed delays in budgeting in Nigeria.

At this point, it may be important to recall the theoretical propositions concerning the existence of policy coordination, non-coordination, and dominance. Policy coordination is indicated when fiscal and monetary policies are positively related. And for this to happen, the estimate of broad money stock growth in the fiscal policy reaction function should have a negative sign and significant. At same time, the estimate of public expenditure in the monetary policy reaction function, should also have a negative sign and significant. It follows, therefore that even if the condition for sign is met, but one of the coefficients is insignificant, there is no policy coordination. In the context of the approach adopted by the study, policy dominance is said to occur when one policy responds positively and significantly to the other, while the other policy fails to do likewise. To be specific, there is fiscal dominance when the coefficient of broad money growth in the fiscal policy reaction function is both positive and statistically significant, whereas the coefficient of public expenditure in the monetary policy model is positive but insignificant. Similar interpretation applies to the case of monetary dominance.

Based on the foregoing, evidence of policy coordination or dominance is lacking in the full sample period, as Table 5.11 indicates. Public expenditure and money growth neither responded to each other nor are their coefficients statistically significant. The estimated coefficients of broad money growth and public expenditure are both negative and insignificant. The sign of the coefficients satisfies the requirement for coordination, but not the size. This finding is consistent with the earlier preliminary results on the extent of policy coordination in the context of policy stance (see Section 2.13, Chapter 2). Using the overall fiscal balance and real interest as indicators, it would be recalled that there was policy coordination for 13 years, whereas there was non-coordination for 17 years. This dominance of years of non-coordination probably explains why coordination was not revealed for the full sample period.

Table 5.12 illustrates the estimates of the policy reaction functions but for the sub-sample, 1980–1999. The variables of the model are the same except that estimation is done for a shorter time period. In the fiscal model, the estimates of GDP, INFL and OILP have the wrong signs, while that of BOP has the correct sign. However, the estimate of OILP and PE(-1) are significant, both at the 10 percent level. In the monetary model, the estimate of BOP has the expected sign, while those of GDPG, INFL and OILP have the wrong signs. Meanwhile, none of the estimates in the monetary model is significant, suggesting that monetary policy failed to respond to the prevailing economic conditions during the sample period. The response of public expenditure to its own lag value, and oil price movements again confirm the partial adjustment behaviour of the budget process, and the pro-cyclical nature of fiscal policy, respectively.

Further, the table reveals that the estimate of PE in the monetary model is positive and insignificant, likewise the estimate of M2G in the fiscal model. Thus, there is no indication of policy coordination, or dominance, leading to accepting the alternative of non-coordination. Recall also the preliminary results indicate that during the period the economy witnessed more years of non-coordination, 11, against 9 of coordination. Generally, both fiscal and monetary policies failed in their stabilization roles during the period, especially as their responses to output and inflation behaviours were unobserved during the period. In particular, the surprising lack of response of monetary policy to inflation seems inconsistent with the central bank's avowed commitment to fight inflation arising from excess liquidity in the economy over the course of the period.

Table 5.12: TSLS Estimates of Policy Reaction Functions, using PE and M2G as Policy Variables 1980 –1999

Independent Variables	Dependent Variables	
	PE	M2G
INPT	-130597.9 38318.0 (-3.4083)*	11.5434 11.5400 (1.0000)
GDPG	3769.1 3030.5 (1.2437)	1.5340 0.9313 (1.6471)
INFL	310.63 635.1 (0.4891)	0.2210 0.2534 (0.8722)
BOP	-0.2599 0.2192 (-1.1858)	-8.48E-06 7.80E-05 (-0.1088)
OILP	4642.8 1076.7 (4.3117)*	0.1356 0.3693 (0.3672)
PE	NA	9.04E-07 3.08E-05 (0.0294)
M2G	444.7 868.0 (0.5123)	NA
PE(-1)	1.2359 0.1191 (10.3750)*	NA

M2G(-1)	NA	0.0003 0.2960 (0.0009)
R^2	0.97	0.31
SEE	45528.6	15.15
F(6,12)	81.93	0.88
DW	2.47	1.93

Note: t-statistics in parenthesis; * significant at the 1% level; ** significant at the 5% level; *** significant at the 10% level. The figures immediately above the t-statistics represent standard errors.

Estimates in Table 5.13 relate to the sub-sample, 2000 –2009, adopting the same set of variables. In the fiscal model, the estimates of GDPG, INFL, and OILP have the wrong signs, while that of BOP has the correct sign. The estimates of OILP and PE (-1) are significant, while the others are not. In the monetary model, the coefficients of GDPG and INFL have the expected negative signs, while those of OILP and BOP do not have the correct signs. Meanwhile, only the estimates of OILP in both models are significant. The findings imply that: (1) fiscal and monetary policy responses to oil price were pro-cyclical; (2) both policies failed to play their stabilization roles; and (3) fiscal policy has a significant lag effect.

The findings further reveal evidence of non-coordination, given that the theoretical expectations for policy coordination, or dominance failed to hold. The estimate of money growth in the fiscal model is negative and statistically significant at the 10% level, while the estimate of public expenditure in the monetary model is negative but insignificant. The theoretical expectation in terms sign for policy coordination is satisfied. But, policy response was only in one direction, monetary policy responding strongly and negatively to fiscal policy. However, money growth and public expenditure would need to be both significant in addition to moving in the same direction for policy coordination to occur.

The findings suggest that fiscal expansion was countered by monetary contraction, further ruling out fiscal dominance, or monetary accommodation.

Table 5.13: TSLS Estimates of Policy Reaction Functions, using PE and M2G as Policy Variables, 2000 – 2009

Independent Variables	Dependent Variables	
	PE	M2G
INPT	-459367.1 490886.2 (-0.9358)	29.9446 19.9232 (1.5030)
GDPG	24293.67 34103.52 (0.7124)	-3.1867 2.0179 (-1.5792)
INFL	19577.9 13857.1 (1.4128)	-0.0677 0.8407 (-0.0805)
BOP	-0.1017 0.0782 (-1.3012)	2.75E-07 7.57E-06 (0.0363)
OILP	18439.6 6188.9 (2.9795)**	1.0307 0.4492 (2.2944)***
PE	NA	-2.73E-05 1.15E-05 (-2.3825)***
M2G	-2959.9 6056.0 (-0.4887)	NA
PE(-1)	0.6938 0.1969 (3.5241)**	NA
M2G(-1)	NA	0.6690 0.4142 (1.6151)
R^2	0.99	0.87
SEE	137780.7	9.27
F(6,3)	71.10	3.52
DW	3.02	2.28

Note: t-statistics in parenthesis; * significant at the 1% level; ** significant at the 5% level; *** significant at the 10% level. The figures immediately above the t-statistics represent standard errors.

5.4.3 **Estimates of Policy Reaction Functions using the Cyclically Adjusted Public Expenditure (CAPE) and Broad Money Supply Growth (M2G) as Policy Variables**

Substituting CAPE for PE, Table 5.14 shows the estimates of policy reaction functions for the full sample period. The signs of the estimates of both models follow similar

pattern as in Table 5.11. In this case, the estimates of OILP in the fiscal model and that of BOP in the monetary model are rightly signed, while the rest are not. The estimates of four variables are statistically significant at different levels: OILP and CAPE (-1) in the fiscal model at the 1% level; GDPG also in the fiscal policy model at the 5% level; and GDPG in the monetary model at the 10% level. Based on the foregoing, it can be said that fiscal policy, as represented by CAPE, reacted to output growth in a systematic but pro-cyclical manner, as shown by the positive relationship between CAPE and GDPG. In addition to responding to its one period lag, CAPE also responded to movements in oil price. On the monetary side, the table shows that money stock growth responded to output growth in a pro-cyclical manner, too, given the positive relationship between M2G and GDPG and the observed significance of the estimates of the later. Furthermore, there is absence of policy coordination in the full sample period, as fiscal and monetary policy failed to respond to each other in any significant manner. To see this, one would notice that the estimate of M2G in the fiscal model is negative and statistically insignificant likewise the estimate of CAPE in the monetary model.

Table 5.14: TSLS Estimates of Policy Reaction Functions, Using CAPE and M2G as Policy Variables, 1980 – 2009

Independent Variables	Dependent Variables	
	CAPE	M2G
INPT	-231729.4 70317.43 (-3.2955)*	7.1549 8.9795 (0.7968)
GDPG	16722.86 7052.27 (2.3713)**	1.4005 0.8263 (1.6948)***
INFL	1940.4 1456.9 (1.3319)	0.1399 0.1910 (0.7325)
BOP	-0.0276 0.0424 (-0.6502)	3.93E-06 5.21E-06 (0.7549)
OILP	9573.0 1935.3 (4.9464)*	0.3070 0.2630 (1.1671)

CAPE	NA	-4.36E-06 6.83E-06 (-0.6380)
M2G	-706.6 1800.8 (-0.3923)	NA
CAPE(-1)	0.9236 0.0535 (17.3040)*	NA
M2G(-1)	NA	0.1788 0.2368 (0.7550)
R^2	0.98	0.31
SEE	124834.8	1.67
F(6,22)	277.8	1.99
DW	2.26	2.28

Note: Standard Errors in parenthesis; * significant at the 1% level; ** significant at the
5% level; *** significant at the 10% level. The figures immediately above the t-statistics
represent standard errors.

Proceeding to Table 5.15, which relates to the sub-sample covering 1980 –1999, using CAPE and M2G as policy variables, it is seen that the results are similar to the results in Table 5.12 in which public expenditure is the fiscal variable. In relation to that table, which also covers the same sample period, the explanatory powers of the models, as depicted by the R-squared are exactly the same, 0.97 and 0.31 for fiscal and monetary policy, respectively. Apart from the intercept, the estimate of OILP in the fiscal model and that of CAPE (-1) are the only ones that are correctly signed and significant. It shows that fiscal policy, as represented by CAPE, responded to its lag value and oil price movement. Although, the applicable estimate of CAPE and M2G have the correct positive sign required for policy coordination or dominance to occur, the insignificance of both estimates rules out any chances of such occurrence. Hence, one can conclude that there is absence of policy coordination during the period 1980–1999 using CAPE and M2G as policy variables.

**Table 5.15: TSLS Estimates of Policy Reaction Functions, Using CAPE
and M2G as Policy Variables, 1980–1999**

Independent Variables	Dependent Variables	
	CAPE	M2G
INPT	-113287.0 52399.3 (-2.1620)**	11.537 11.5405 (0.9995)
GDPG	3848.6 4288.7 (0.8974)	1.5261 0.9427 (1.6188)
INFL	60.87 873.21 (0.0697)	0.2222 0.2501 (0.8882)
BOP	-0.3866 0.3026 (-1.2778)	-6.99E-06 7.73E-05 (-0.0905)
OILP	4040.8 1510.6 (2.6750)*	0.1353 0.3625 (0.3733)
CAPE	NA	1.43E-06 2.62E-05 (0.0547)
M2G	725.9 1218.0 (0.5959)	NA
CAPE(-1)	1.1641 0.1376 (8.4579)*	NA
M2G(-1)	NA	-0.0005 0.2951 (-0.0017)
R^2	0.96	0.31
SEE	63846.3	15.2
F(6,12)	52.80	0.88
DW	1.94	1.91

Note: t-statistics in parenthesis; * significant at the 1% level; ** significant at the
5% level; *** significant at the 10% level. The figures immediately above the t-statistics
represent standard errors.

For the sample period covering 2000–2009, as Table 5.16 illustrates, one can also
observe similar patterns in comparison with Table 5.13. Here, the explanatory power of
the models stood at similar figures, 0.99 and 0.86, respectively, for the fiscal and monetary
models. The theoretical signs of the estimates as well as their levels of statistical
significance are quite similar. In terms of sign, the estimates of OILP and that of CAPE (-

1) have the correct positive sign. The estimates of three variables are significant at different levels: OILP and CAPE in the monetary model at the 1% level; OILP in the fiscal model at the 5% level; and CAPE (-1) at the 1% level. As such, there is no indication of policy coordination or dominance, as money stock growth reacted to changes in CAPE significantly, but negatively.

Further, considering the results obtained using public expenditure, PE, as fiscal policy measure, there seems to be no clear difference from those of CAPE, suggesting that there might be no role for automatic stabilizers in the Nigerian economy. Recall that CAPE is defined as public expenditure adjusted for the possible influence of automatic stabilizers on the economy. Now, if there is no significant difference between the results obtained using the two policy variables, PE and CAPE, it could well mean that automatic stabilizers may not be effective in stabilizing the economy in the event of recession or overheating, as theory suggests. This finding therefore underscores the importance of discretionary policy-making in the Nigerian economy.

Table 5.16: TSLS Estimates of Policy Reaction Functions, using CAPE and M2G as Policy Variables, 2000 – 2009

Independent Variables	Dependent Variables	
	CAPE	M2G
INPT	-469606.2 471228.3 (-0.9966)	31.1069 21.0963 (1.4745)
GDPG	29449.1 32737.4 (0.8996)	-3.2419 2.1338 (-1.5193)
INFL	20253.5 13302.1 (1.5226)	-0.0481 0.8914 (-0.0539)
BOP	-0.1039 0.0750 (-1.3844)	5.61E-07 8.05E-06 (0.0698)
OILP	16587.5 5941.1 (2.7920)**	1.0155 0.4831 (2.1020)***

CAPE	NA	-2.86E-05 1.31E-05 (-2.1781)***
M2G	-866.3 5813.5 (-0.1490)	NA
CAPE(-1)	0.6790 0.1890 (3.5924)*	NA
M2G(-1)	NA	0.7135 0.4357 (1.6377)
R^2	0.99	0.86
SEE	132260.9	9.8
F(6,3)	69.22	3.1
DW	3.08	2.22

Note: t-statistics in parenthesis; * significant at the 1% level; ** significant at the
    5% level; *** significant at the 10% level. The figures immediately above the t-statistics
    represent standard errors.

5.4.4 Estimates of Policy Reaction Functions Using the Overall Fiscal Balance (OFB) and Broad Money Supply Growth (M2G) as Policy Variables

Estimates in Tables 5.17–5.19 were obtained using the OFB and M2G as policy variables, while the explanatory variables remain the same. The three tables differ with respect to sample period covered. Table 5.17 relates to the full sample period, while Tables 5.18 and 5.19 cover 1980 – 1999 and 2000 – 2009, respectively.

As table 5.17 shows, the estimates of GDPG and INFL have the correct sign, while those of OILP and BOP do not. In the monetary model, the estimates of GDGP, BOP, INFL, and OILP have the wrong sign. The estimates of three variables, BOP, OILP, and GDPG, passed the significance test at various levels: BOP in the fiscal model at 1%, OILP also in the fiscal policy model at 5%, and GDPG in both models at 10%. These would suggest that both fiscal and monetary policies responded meaningfully to output behaviour in attempt to stabilize the economy. Fiscal policy appeared countercyclical, while monetary policy was pro-cyclical, indicating that fiscal policy would be preferred for output stabilization purposes. The procyclicality of monetary policy seems counterintuitive and

might be due to fiscal dominance and a weak monetary transmission mechanism. In contrast to findings in the literature, such as Raj, Khundrakpan and Das (2011), fiscal policy was pro-cyclical, while monetary policy was countercyclical. The results also suggest that both policies showed little concern over inflation, fiscal policy displaying a positive but weak effort, consistent with the findings of Abram et al. (1983) and Kishan and Opiela (2000) that fiscal policy was countercyclical, but at the same time failed to respond to inflation. The response of fiscal policy to oil price again highlights the exposure of the economy to the global oil market. Fiscal policy actions worsened the external balance, while the insignificance of the lagged estimates implied the absence of policy lags.

Taking together with the finding in the previous section, it appears that fiscal rather than monetary policy would have greater influence on output, which contrasts with findings of previous studies on Nigeria, irrespective of differences in sample period and econometric methodology (see Ajayi (1974), Ubogu (1983), Asogu (1998), Ajisafe and Folorunso (2002), Adefeso and Mobolaji (2010). Some evidence emphasized the use of monetary policy for economic stabilization in Nigeria, and further suggests that fiscal policy actions are probably distortionary (Ubogu, (1983), Asogu, (1998), and Ajisafe and Folorunso, (2002). Contrarily, evidence from Olaloye and Ikhide, (1995) point to the usefulness of fiscal policy in economic stabilization, government spending in particular.

Examining the table further for the nature of relationship, it is observed that the estimate of M2G in the fiscal model and that of OFB in the monetary model are both positive but insignificant. Although both estimates are consistent with theoretical expectations in terms of sign, their insignificance does not support policy coordination, or dominance. In addition, fiscal and monetary responses to inflation and output growth do

not reflect cooperation between the government and the central bank. This is because both policies seemed concerned about output stabilization disregarding price stability. In view of the trade-off between output growth and inflation, one would expect fiscal policy to achieve output stabilization, while monetary policy targets price stability at least to show a sign of cooperation between the government and the central bank.

The above findings suggest that policy coordination is desirable in Nigeria, as also noted previously by Olaloye and Ikhide (1995), Asogu (1998), and Ajisafe and Folorunso (2002). The evidence of lack of coordination is consistent with findings by Bradley and Potter (1986), and Kishan and Opiela (2000) on the US economy. Similarly, Arby and Hanif (2010) and Nasir et al. (2010) confirmed that in Pakistan, monetary and fiscal policies were hardly coordinated in addressing economic issues. Results from Raj, Khundrakpan and Das (2011), on India point to a similar conclusion. Other earlier works, such as Gandolfo and Petit (1987), Petit (1989, 1990), and Hughes–Hallet and Petit (1990) emphasized the need for policy coordination in the Italian economy   likewise, Nordhaus (1994a, 1994b), which made a case for the US economy.

Table 5.17: TSLS Estimates of Policy Reaction Functions, Using OFB and MG2 as Policy Variables, 1980 –2009

Independent Variables	Dependent Variables	
	OFB	M2G
INPT	3294.2 64151.4 (0.0514)	9.6386 7.5111 (1.2832)
GDPG	-10704.7 6208.7 (-1.7241)***	1.3229 0.7198 (1.8379)***
INFL	561.5 1402.6 (0.4003)	0.1116 0.1944 (0.5739)
BOP	0.1572 0.0401	1.60E-06 6.05E-06

		(3.9217)*	(0.2646)
OILP	-3139.4 1257.2 (-2.4971)**		0.2277 0.1692 (1.3457)
OFB	NA		2.23E-05 2.54E-05 (0.8787)
M2G	1418.1 1735.2 (0.8171)		NA
OFB(-1)	0.4303 0.3096 (1.3900)		NA
M2G(-1)	NA		0.1893 0.2326 (0.8142)
R^{-2}	0.58		0.32
SEE	120098.5		14.4
F(6,22)	5.04		1.76
DW	2.22		1.94

Note: t-statistics in parenthesis; * significant at the 1% level; ** significant at the
5% level; *** significant at the 10% level. The figures immediately above the t-statistics
represent standard errors.

Table 5.18 covers the period 1980–1999, and relates OFB and M2G to the variables of the models. As indicated, the estimate of GDPG in the fiscal model has the correct sign unlike that of the monetary model, although both are statistically insignificant. The estimates of INFL in the two models are both positive and significant at different levels. These results suggest that by raising the fiscal balance, fiscal policy responded to contain inflation. At the same time, monetary policy action which raised money growth worsened the inflationary situation. In sum, the government and the central bank seemed concerned about price stability rather than output stabilization, unlike the findings for the full sample period.

Further, the estimates of OILP in both models have the wrong sign and are insignificant. Similarly, the estimate of BOP in the fiscal model has the wrong sign

although it is statistically significant at the 1 percent level, unlike that of the monetary model, which has a wrong sign and is insignificant. Fiscal policy reacted to external imbalance given the significance of the BOP estimate in the model, while monetary policy failed to do so. In the context of maintaining external balance therefore, fiscal policy was more relevant during the period 1980–1999.

On the relationship between the fiscal and monetary authorities, there is indication of fiscal dominance, or monetary accommodation. In this direction, the estimate of M2G in the fiscal model is negative and significant, whereas that of OFB in the monetary model is negative and insignificant. This shows that money stock growth rose following a fall in the fiscal balance. Thus, an expansionary fiscal policy was accompanied by an expansionary monetary policy, which reflects efforts of the central bank to accommodate fiscal expansion to possibly keep the interest rates from rising.

Table 5.18: TSLS Estimates of Policy Reaction Functions, using OFB and M2G as Policy Variables, 1980 – 1999

Independent Variables	Dependent Variables	
	OFB	M2G
INPT	111.6 38078.9 (0.0029)	18.0181 10.0221 (1.7978)***
GDPG	1092.3 2282.6 (0.4785)	1.3050 0.7612 (1.7143)
INFL	1217.7 573.5 (2.123)**	0.4489 0.2256 (1.9900)***
BOP	0.3736 0.1400 (2.667)*	1.06E-04 6.51E-05 (1.6302)
OILP	-346.3 1078.0 (-0.3212)	-0.1462 0.3236 (0.4618)
OFB	NA	-2.20E-04 9.56E-05 (-2.2964)**
M2G	-1040.2 694.7	NA

		(-1.4973)	
OFB(-1)	0.7410 0.5219 (1.4199)	NA
M2G(-1)	NA	-0.2722 0.2715 (-0.0026)
R^2	0.76	0.51
SEE	34070.1	12.6
F(6,12)	10.7	2.2
DW	2.0	2.04

Note: t-statistics in parenthesis; * significant at the 1% level; ** significant at the
5% level; *** significant at the 10% level. The figures immediately above the t-statistics
represent standard errors.

Examining Table 5.19, covering the sub-period 2000 – 2009, the following are observed: (a) the estimates of GDPG, INFL, BOP and OILP in the fiscal model have the correct signs; (b) similarly, the estimates of GDPG, OILP and INFL in the monetary model have the correct signs, while that of BOP does not; (c) the estimates of INFL and BOP are significant in the fiscal policy model, as well as the estimate of GDPG in the monetary model; (d) the estimates of OFB (-1) and M2G (-1) are significant; and (e) respective estimates of OFB and M2G have the correct sign and are statistically significant. By interpretation, fiscal policy was concerned with price stability but not with output stabilization. At the same time, monetary policy was concerned with output stabilization disregarding price stability. These findings would suggest some form of cooperation although with traditional roles of the two authorities reversed. In addition, fiscal policy was concerned with maintaining healthy external position. Also, both fiscal and monetary policies have significant lag effects on the economy.

Further, evidence of policy coordination is indicated because of the consistency of the estimates of M2G and GDPG with theoretical expectations − both are positive and

significant. In sum, the results reflect a systematic attempt to cooperate and share responsibilities in the sense that while the government only responded to inflation behaviour and the external position, the central bank responded to output growth. The empirical approach adopted has not explicitly captured a causal relationship between policy coordination and economic performance. However, judging by the actual GDP growth, inflation and external balance, which the government and the central bank were able to cooperatively control during the period 2000 –2009, one can infer that policy coordination produces better outcomes.

Table 5.19: TSLS Estimates of Policy Reaction Functions, using OFB and M2G as Policy Variables, 2000 – 2009

Independent Variables	Dependent Variables	
	OFB	M2G
INPT	-1125134.0 163383.0 (-6.8865)*	44.4605 18.1111 (2.4549)**
GDPG	25617.1 13431.4 (1.9073)	-4.4428 1.7266 (-2.5731)**
INFL	11256.1 5498.8 (2.0470)***	-0.1804 0.7302 (-0.2471)
BOP	0.1162 0.0214 (5.4145)*	2.97E-06 5.89E-06 (0.5046)
OILP	99.4334 1043.2 (0.0953)	0.0767 0.1299 (0.5904)
OFB	NA	5.50E-05 1.90E-05 (2.8949)**
M2G	8661.7 1799.3 (4.8139)*	NA
OFB(-1)	-1.3868 0.2999 (-4.6240)*	NA
M2G(-1)	NA	0.8098 0.3562 (2.2730)***

R^2	0.97	0.90
SEE	59857.0	8.1
F(6,3)	18.9	4.8
DW	1.83	2.3

Note: t-statistics in parenthesis; * significant at the 1% level; ** significant at the 5% level; *** significant at the 10% level. The figures immediately above the t-statistics represent standard errors.

5.4.5 Estimates of Policy Reaction Functions using the Cyclically Adjusted Overall Fiscal Balance (CAOFB) and Broad Money Supply Growth (M2G) as Policy Variables

The final set of Tables 5.20 –5.22 illustrate results obtained using a combination CAOFB and M2G. Table 5.20 relates to the full sample period, while Table 5.21 and 5.22 summarizes the results of the sub-sample, 1980–1999 and 2000–2009, respectively. In the full sample period, the coefficient of GDPG in the monetary model is positive and significant, implying that monetary policy response to output behaviour was pro-cyclical. Apart from GDPG, the estimates of the other variable in the monetary model are inconsistent with theoretical expectations in terms of sign and size. In particular, it suggests that monetary policy failed to achieve price and external stability objectives. The estimates of three variables are significant in the fiscal model: BOP and OILP at the 1% level and the CAOFB (-1) at the 10% level with only the estimate of BOP having the correct sign. To the extent that fiscal policy responded only to the external balance, it means that the government's stabilization function was limited just like monetary policy. Considering the relationship between fiscal and monetary policy, it is obvious that there was no policy coordination between the fiscal and monetary authorities. The applicable estimates of CAOFB and M2G have different signs and are insignificant.

Table 5.20: TSLS Estimates of Policy Reaction Functions, using CAOFB and M2G as Policy Variables, 1980 - 2009

Independent Variables	Dependent Variables	
	CAOFB	M2G
INPT	4860.1	9.7786

	62669.8 (0.0776)	7.3326 (1.3337)
GDPG	-9605.4 5979.9 (-1.6063)	1.4080 0.6999 (2.0116)**
INFL	441.3 1362.6 (0.3239)	0.0852 0.1916 (0.4445)
BOP	0.1635 0.0386 (4.2379)*	0.0000 0.0000 (0.0103)
OILP	-3278.6 1188.4 (-2.7589)*	0.2548 0.1662 (1.5336)
CAOFB	NA	-0.0000 0.0000 (1.3181)
M2G	1884.1 1654.4 (1.1389)	NA
CAOFB(-1)	0.5531 0.2995 (1.8468)***	NA
M2G(-1)	NA	0.1993 0.2244 (0.8881)
R^2	0.62	0.35
SEE	114882.3	14.1
F(6,22)	5.9	1.98
DW	2.2	2.0

Note: t-statistics in parenthesis; * significant at the 1% level; ** significant at the
5% level; *** significant at the 10% level. The figures immediately above the t-statistics
represent standard errors.

Results for the sub-sample, 1980 – 1999 show a somewhat different picture. Given the
high coefficient of determination in the fiscal model, 0.79, it is expected that changes in fiscal
policy would have significant impact on the target variables. Unfortunately, none of the
estimates of the model passed the significance test at any level, although GDP, INFL and BOP
have the expected signs. Similarly, the table shows that none of the estimates of the monetary
model is significant at any level. The reason for these results is not immediately clear. It may
not be unconnected with variable definition and data.

Table 5.21:   TSLS Estimates of Policy Reaction Functions, Using CAOFB and M2G as Policy Variables, 1980 – 1999

Independent Variables	Dependent Variables	
	CAOFB	M2G
INPT	13338.3 30293.4 (0.4403)	12.1321 11.5669 (1.0489)
GDPG	103.2 2544.3 (0.0405)	1.5379 0.8994 (1.7099)
INFL	843.2 529.4 (1.5929)	0.2747 0.2809 (0.9778)
BOP	0.2771 0.3618 (0.7660)	0.0000 0.0000 (0.1647)
OILP	-1158.7 968.8 (-1.1961)	0.0819 0.3850 (0.2128)
CAOFB	NA	-0.0000 0.0001 (-0.3870)
M2G	-528.0 827.1 (-0.0638)	NA
CAOFB(-1)	0.6534 0.9987 (0.6543)	NA
M2G(-1)	NA	-0.0320 0.3035 (-0.1054)
R^{-2}	0.79	0.31
SEE	38500.5	15.1
F(6,12)	7.5	0.91
DW	2.3	1.97

   Note: t-statistics in parenthesis; * significant at the 1% level; ** significant at the
   5% level; *** significant at the 10% level. The figures immediately above the t-statistics
   represent standard errors.

Finally, Table 5.22 presents the estimates of the policy reaction functions, for the period 2000 –2009. As the table indicates, the estimates of GDPG, INFL, BOP and OILP in the fiscal model have the correct signs with BOP being significant at the 1% level. In the monetary model, the estimates of GDPG and INFL have the correct signs, while those of BOP and OILP do not. In sum, the analysis shows that during the period, fiscal policy responded to the external balance, while monetary policy responded to output growth in a countercyclical

manner. Additional results do not point to any systematic response of fiscal and monetary policy to inflation. Fiscal policy responded to its one period lag, again confirming the earlier findings of partial adjustment behaviour of the budget. Another finding is the significance of the estimate of M2G in the fiscal model and that of CAOFB in the monetary model. Both estimates have different signs, thus effectively ruling out the possibility of policy coordination.

Table 5.22: TSLS Estimates of Policy Reaction Functions, Using CAOFB and M2G as Policy Variables, 2000 – 2009

Independent Variables	Dependent Variables	
	CAOFB	M2G
INPT	-1232848.0 256247.2 (-4.8112)*	44.5455 19.5261 (2.2813)***
GDPG	30464.4 18559.7 (1.6414)	-4.4604 1.8569 (-2.4020)***
INFL	11774.6 7959.0 (1.4794)	-0.0926 0.7879 (-0.1175
BOP	0.1098 0.0309 (3.5574)*	0.0000 0.0000 (0.3572)
OILP	492.7 1586.4 (0.3106)	0.0899 0.1406 (0.6391)
CAOFB	NA	-0.0000 0.0000 (2.6163)**
M2G	10194.2 2505.6 (4.0686)*	NA
CAOFB(-1)	-1.4631 0.48152 (-3.0384*	NA
M2G(-1)	NA	0.7526 0.3844 (1.9581)
R^{-2}	0.95	0.89
SEE	82997.5	8.6
F(6,3)	10.0	4.1
DW	1.99	2.4

Note: t-statistics in parenthesis; * significant at the 1% level; ** significant at the

5% level; *** significant at the 10% level. The figures immediately above the t-statistics represent standard errors.

5.4.6 **POLICY IMPLICATIONS OF THE EMPIRICAL RESULTS**

There are similarities in the results of the different models as reflected in the foregoing discussions. For example, the models that had public expenditure (PE) and overall fiscal balance (OFB) as fiscal measures revealed results that were quite similar with their cyclically adjusted counterparts. These two measures produced better results, and would therefore form the basis of the analysis of policy implications. To this end, the discussions would be in two parts. The first focuses on the policy implications that derive from PE and M2G (money supply growth) combination, and the second part would be on that of OFB and M2G.

The policy implications of the results of PE and M2G for the full sample period and sub-periods are as follows:

▪ Taking together, the response of public expenditure to oil price movement and output growth points to the pro-cyclicality of fiscal policy in Nigeria. It suggests that fiscal policy does not lean against the wind in line with the Keynesian proposition. In particular, as public expenditure closely trended oil revenue, the exposure to the volatile oil market will continue to have adverse consequences for fiscal policy and the economy. This calls for a proper management of oil revenue, especially during revenue booms since a persistent cyclical downturn in oil price would imply a sudden fiscal adjustment in the absence of significant savings of surplus oil revenue. The finding thus lends weight to the Sovereign Wealth Fund policy of the present government.

▪ The significant lag effect of fiscal policy reflects delays in the budget process, a recurrent problem in the country. It suggests that fiscal actions would not be fast-acting in addressing economic problems. Because of the delays in budget enactment, the government

has, in recent years, extended budget implementation beyond the fiscal year to the first quarter of the following year. Giving the importance of policy timing, the finding underscores the need for a timely preparation and approval of the federal budget, which will in turn shorten the budget cycle, and minimize delays in fiscal policy effects.

- Automatic stabilizers by design are expected to offset fluctuations in economic activity without direct government intervention. However, the ineffectiveness of autonomic stabilizers, as evidence suggests, implies that if left alone they (autonomic stabilizers) will not produce the desired results, and hence reinforces the importance of discretionary policy-making in Nigeria. Thus, the government must continue to play a prominent role in managing the economy using stabilization tools wisely.

- The apparent failure of monetary policy to address price and external stability objectives warrant close attention, especially as it is inconsistent with the central bank's avowed commitment to fight inflation over the period. It suggests a need for a better understanding of the constraints to monetary policymaking in the country, including the possible impacts of the monetary transmission channels.

- Generally, the absence of a clear systematic response of fiscal and monetary policies to economic conditions reflects an unplanned approach to economic management in the country. While this is true to some degree in view of the country's experience with economic management, it however signals the existence of fundamental challenges in policymaking and implementation. Although many basic requirements for effective policymaking and implementation are already in place, there are critical issues such as timing of policy action, appropriateness of policy tools, the prevailing political regime, exogenous events, and quality of institutions, among others.

▪ Evidence of policy coordination was not supported by the empirical results of the full sample period and sub-periods. It suggests that fiscal and monetary policy outcomes would be inferior because both policies would tend to pull the economy in different directions; this probably explains the overall weak performance of the economy.

The results of the models using the OFB and M2G as measures have the following policy implications:

▪ The results for the full sample period indicate that fiscal policy is countercyclical, while monetary policy is pro-cyclical. Overall, this suggests that fiscal policy would be an effective tool to stabilize output, while monetary policy would probably makes things worse. This is contrary to the majority of earlier findings in the literature, which suggest that monetary policy rather than fiscal is more powerful. However, during 2000–2009, monetary policy became countercyclical, when fiscal influence was weak. By this, it would appear that monetary policy could be an effective tool when fiscal policy fails.

▪ Fiscal and monetary policy responses to output growth and price stability displayed inconsistent patterns. On the one hand, findings for the full sample period showed that both policies responded to output growth but not to inflation, while in the period 1980–1999, both policies responded to inflation but not to output growth. On the other hand, findings for the period 2000–2009, showed that monetary policy responded to output growth, but not to inflation, while fiscal policy responded to inflation but not to output growth. This inconsistency would suggest that the macroeconomic framework is not integrated and coherent enough, and could weaken policy coordination efforts.

▪ The strong correlation of fiscal policy with the oil price confirms the exposure of the economy to oil price volatility. Also, in the context of maintaining external balance, it was

clear that fiscal policy was more relevant implying that focus should be on the fiscal side, especially on curtailing government spending.

▪ Fiscal dominance or monetary accommodation observed during 1980–1999 reflects efforts of the central bank to accommodate fiscal expansion, but were at the cost of losing control over inflation. The implication is that the central bank tended to sacrifice its price stability objective when it succumbed to pressure to monetize fiscal deficits.

▪ The ample evidence of fiscal and monetary policy coordination during 2000–2009, although with role reversal, reflects recent efforts by the government and central bank to work harmoniously together. It is clear that policy coordination permitted both policymakers to address a wider range of economic issues compared to the cases when policies were not coordinated, as observed in the full sample and the sub-period, 1980–1999. Thus, policy coordination is desirable. In addition, the actual performance of output, inflation, and the balance of payments, which both policymakers were able to cooperatively influence during the period suggests that policy coordination could indeed produce better policy outcomes.

Table 5.23: Summary of Empirical Findings

s/n	Fiscal Policy Variable	Sample Period		
		1980–2009	**1980 –1999**	**2000– 2009**
1	**Public Expenditure (PE)**	▪ The estimate of GDPG is significant in both the fiscal and monetary policy reaction functions, although they have the wrong signs. ▪ It implies that public expenditure and money stock growth responded to output growth, but in a pro-cyclical manner. ▪ There is fairly strong response of public expenditure to oil price movement, while monetary policy failed to do so. ▪ Both fiscal and monetary policy did not respond jointly and systematically in addressing inflation and external imbalances. ▪ Public expenditure has a significant lag effect, whereas such hypothesis failed to hold for money stock growth. ▪ There is evidence of lack of coordination for the period because public expenditure and money stock growth do not respond positively to each as expected neither are their coefficients statistically significant	▪ In the fiscal model, the estimates of GDPG, INFL and OILP have the wrong signs, while that of BOP has the correct sign. ▪ However, the estimate of OILP and PE (-1), are significant both at the 10 percent level. ▪ In the monetary model, the estimate of BOP has the expected sign, while those of GDPG, INFL and OILP have the wrong signs. ▪ None of the estimates in the monetary model is significant, suggesting that monetary policy failed to respond to the prevailing economic conditions during the sample period. ▪ The response of public expenditure to its own lag value, and oil price movements again confirm the partial adjustment behaviour of the budget process, and the pro-cyclical nature of fiscal policy. ▪ The estimate of PE in the monetary model was positive and insignificant, likewise the estimate of M2G in the fiscal model.	▪ In the fiscal model, the estimates of GDPG, INFL, and OILP have the wrong signs, while that of BOP has the correct sign. ▪ The estimates of OILP and PE (-1) are significant, while the others are not. ▪ In the monetary model, the coefficients of GDPG and INFL have the expected negative sign, while those of OILP and BOP do not have the correct signs. ▪ Only the estimates of OILP in both models are significant. ▪ The findings imply that: fiscal and monetary policy responses to oil price were pro-cyclical; both policies failed to play their stabilization roles; and fiscal policy has a significant lag effect. ▪ The findings further reveal evidence of non-coordination, given that the theoretical expectations for policy coordination, or dominance failed to

			▪ Thus, there is no indication of policy coordination, or dominance, leading to accepting the alternative of non-coordination.	hold. The estimate of money growth in the fiscal model is negative and statistically significant at the 10% level, while the estimate of public expenditure in the monetary model is negative but insignificant.
2	**Cyclically Adjusted Public Expenditure (CAPE)**	▪ The results are generally not very different from what have been observed for the case of public expenditure. ▪ The estimates of OILP in the fiscal model and that of BOP in the monetary model are rightly signed, while the rest are not. ▪ The estimates of four variables are statistically significant at different levels: OILP and CAPE (-1) in the fiscal model at the 1% level; GDPG also in the fiscal policy model at the 5% level; and GDPG in the monetary model at the 10% level. ▪ Thus, fiscal policy, as represented by CAPE, reacted to the growth in output in a systematic but pro-cyclical manner. In addition to responding to its one period lag, CAPE also responded to movements in oil price. ▪ The evidence shows that money stock growth responded to output growth, but no longer to oil price movement. ▪ There is apparent absence of policy coordination, as fiscal and monetary policy	▪ The estimate of OILP in the fiscal model and that of CAPE (-1) are the only ones that are correctly signed and significant. ▪ It shows that fiscal policy, as represented by CAPE, responded to its lag value and oil price movement. ▪ Although, the applicable estimate of CAPE and M2G have the correct positive sign required for policy coordination or dominance to occur, the insignificance of both estimates rules out any chances of such occurrence. ▪ Thus, evidence of policy dominance or coordination is missing.	▪ The theoretical signs of the coefficients as well as their level of statistical significances are similar to those of the period 1980–1999 ▪ In terms of sign, the estimates of OILP and that of CAPE (-1) have the correct positive sign. ▪ The estimates of three variables are significant at different levels: OILP and CAPE in the monetary model at the 1% level; OILP in the fiscal model at the 5% level; and CAPE (-1) at the 1% level. ▪ As such, there is no indication of policy coordination or dominance, as money stock growth reacted to changes in CAPE significantly, but negatively. ▪ There seems to be no clear difference from those of CAPE, suggesting that there is probably no role for automatic stabilizers in the Nigerian economy.

| 3 | Overall Fiscal Balance (OFB) | ▪ The estimates of GDPG and INFL have the correct sign, while those of OILP and BOP do not.
▪ In the monetary model, the estimates of GDGP, BOP, INFL, and OILP have the wrong sign. The estimates of three variables, BOP, OILP, and GDPG, passed the significance test at various levels: BOP in the fiscal model at 1%; OILP also in the fiscal policy model at 5%, and GDPG in both models at 10%.
▪ These would suggest that both fiscal and monetary policies responded meaningfully to output behaviour in attempt to stabilize the economy.
▪ Fiscal policy appeared countercyclical, while monetary policy was pro-cyclical, indicating that fiscal policy would be preferred for output stabilization purposes.
▪ Both policies showed little concern over inflation.
▪ The response of fiscal policy to oil price | ▪ The estimate of GDPG in the fiscal model has the correct sign unlike that of the monetary model, although both are statistically insignificant.
▪ The estimates of INFL in both models are both positive and significant at different levels.
▪ These results suggest that by raising the fiscal balance, fiscal policy responded to contain inflation.
▪ At the same time, monetary policy action which raised money growth worsened the inflationary situation.
▪ In sum, the government and the central bank seemed concerned about price stability rather than output stabilization, unlike the findings for the full sample period.
▪ Further, the estimates of OILP in both models have the wrong sign and are insignificant.
▪ Similarly, the estimate of BOP in the fiscal model has the wrong sign although it is statistically significant at the 1 | ▪ The estimates of GDPG, INFL, BOP and OILP in the fiscal model have the correct signs
▪ Similarly, the estimates of GDPG, OILP and INFL in the monetary model have the correct signs, while that of BOP does not;
▪ The estimates of INFL and BOP are significant in the fiscal policy model, as well as the estimate of GDPG in the monetary model
▪ The estimates of OFB (-1) and M2G (-1) are significant;
▪ The estimate of OFB in the monetary model and that of M2G in the fiscal model have the correct sign and are statistically significant.
▪ By interpretation, fiscal policy was concerned with price stability but not with output stabilization.
▪ At the same time, monetary |

(Continued from previous page, top row:)

| | | failed to respond to each other. | | ▪ Thus, automatic stabilizers may not be relied upon to move the economy out of recession or to cool the economy in the event of overheating.
▪ Findings generally underscore the importance of discretionary policy-making in the Nigerian economy. |

		again highlights the exposure of the economy to the global oil market. ▪ Fiscal policy actions worsened the external balance, while the insignificance of the lagged estimates implied the absence of policy lags. ▪ There is evidence of absence of policy coordination considering the inconsistency of the estimates with theoretical expectations for policy coordination.	percent level, unlike that of the monetary model, which has a wrong sign and is insignificant. ▪ Fiscal policy reacted to external imbalance given the significance of the BOP estimate in the model, while monetary policy failed to do so. ▪ On the relationship between the fiscal and monetary authorities, there is indication of fiscal dominance, or monetary accommodation.	policy was concerned with output stabilization disregarding price stability. ▪ These findings would suggest some form of cooperation although with traditional roles of the two authorities reversed. ▪ In addition, fiscal policy was concerned with maintaining healthy external position. ▪ Also, both fiscal and monetary policies have significant lag effects ▪ Further, evidence of policy coordination is indicated because of the consistency of the estimates of M2G and GDPG with theoretical expectations – both are positive and significant. ▪ Judging by the actual GDP growth, inflation and external balance, one can infer that policy coordination produces better outcomes.
4	**Cyclically Adjusted Overall Fiscal Balance (CAOFB)**	▪ The estimate of GDPG in the monetary model is positive and significant, implying that monetary policy response to output behaviour was pro-cyclical. ▪ Apart from GDPG, the estimates of the other variable in the monetary model are inconsistent with theoretical expectations in terms of sign and size. ▪ In particular, it suggests that monetary	▪ Results show a somewhat different picture. ▪ Estimates GDP, INFL and BOP have the expected signs. ▪ None of the estimates of the models passed the significance test at any level. ▪ The reason for these results is not immediately clear. It may be related to variable definition and data issues.	▪ The estimates of GDPG, INFL, BOP and OILP in the fiscal model have the correct signs with BOP being significant at the 1% level. ▪ In the monetary model, the estimates of GDPG and INFL have the correct signs, while those of BOP and OILP do not. ▪ In sum, the analysis shows that

		policy failed to achieve price and external stability objectives. ■ The estimates of three variables are significant in the fiscal model: BOP and OILP at the 1% level and the CAOFB (-1) at the 10% level with only the estimate of BOP having the correct sign. ■ Thus, to the extent that fiscal policy responded only to the external balance, it means that the government's stabilization function was limited just like monetary policy. ■ Policy coordination between the fiscal and monetary authorities was lacking as the applicable estimates of CAOFB and M2G have different signs and are insignificant. .		during the period, fiscal policy responded to the external balance, while monetary policy responded to output growth in a countercyclical manner. ■ Additional results do not point to any systematic response of fiscal and monetary policy to inflation. ■ Fiscal policy responded to its one period lag, again confirming the earlier findings of partial adjustment behaviour of the budget. ■ Finally, the significance of the estimate of M2G in the fiscal model and that of CAOFB in the monetary model, although both estimates have different signs, effectively ruled out the possibility of policy coordination.

CHAPTER SIX

SUMMARY OF FINDINGS, POLICY RECOMMENDATIONS AND CONCLUSIONS

6.1 SUMMARY OF FINDINGS

The study examined monetary and fiscal policy coordination in macroeconomic stabilization in Nigeria. Accordingly, it deployed a general framework that permits the investigation of policy coordination by specifying monetary and fiscal policy reaction functions on the assumption that policy outcomes are the result of the joint interaction of fiscal and monetary policies with other variables of the economic system. Empirical analyses focused on the period 1980–2009, with further analyses in sub-periods, 1980–1999, and 2000–2009, reflecting the different level of coordination observed between the government and the central bank.

Findings from the analyses of the nature of relationship between the government and the central bank indicates that although the critical elements needed for effective policy coordination existed at different levels, they were generally less well rooted. The institutional setting for macroeconomic policymaking seems appropriate with clear division of responsibilities among policymakers. However, for the most part, the central bank did not enjoy independence from the government, which hindered its ability to achieve monetary objectives. On its part, government's lack of fiscal discipline was compounded by the shallow depth of the capital market, which implied that the banking system, particularly the central bank, had to bear the burden of financing government deficits with negative consequences for

the economy. In this setting, the analysis of monetary and fiscal policy stance, a crude measure of policy coordination, suggests that policies were largely uncoordinated.

For many years, fiscal and monetary policy coordination was limited to pre-budget consultation during which fiscal targets were harmonized with monetary targets to ensure consistency of the policy mix. As such, policy coordination suffered implementation setbacks. However, the coordination framework improved somewhat at the turn of the last decade reflecting commitment by the government and the central bank to work more closely together in the policymaking and implementation processes. Greater central bank independence, better debt management strategy, and various reforms to improve fiscal discipline and transparency, among other things, appeared to have paved the way for institutionalizing the mechanisms for effective policy coordination.

Besides the regular contact between the central bank governor and the President of Nigeria, policy coordination takes place at a much higher level through the Monetary Policy Committee (MPC), responsible within the central bank for formulating monetary and credit policies. Additional operational arrangements such as the Fiscal Liquidity Assessment Committee (FLAC) and the Monetary and Fiscal Policy Coordination Committee (MFPCC), both comprising representatives of the government and the central bank, with different mandates have enhanced policy coordination efforts. Although still relatively young, these Committees have provided forum for a more regular interface between the government and the central bank and helped resolve policy conflicts. The fiscal responsibility law provides a numerical constraint on government spending. But, it remains to be seen whether government would comply with the rule.

On the empirical front, several messages emerged from the findings. First, analysis based on public expenditure, a narrow fiscal measure, shows that in terms of output stabilization, fiscal policy was pro-cyclical, while the overall fiscal balance, a broad measure, revealed that fiscal policy was countercyclical. The latter finding suggests that fiscal policy would be an effective tool for macroeconomic stabilization. On the contrary, monetary policy was generally pro-cyclical. Nevertheless, it could be effective when fiscal policy fails, as evidence suggests. Further, the strong sensitivity of public expenditure to oil price indicates that the economy continues to be exposed to oil revenue volatility, which highlights the need for good management of petroleum resources both for stabilization purposes and for intergenerational equity considerations. It also underscores the need for diversification of the economy as the best line of defense against downside risks stemming from the strong reliance on the petroleum sector.

Additional findings revealed that fiscal policy has a significant lag effect on the economy irrespective of the fiscal measure adopted, which reflects delays in the budget process. In this regard, measures to minimize, or possibly eliminate delays in federal budgeting are warranted given that policy timing is critical. In the context of maintaining external balance, fiscal policy performed better than monetary policy implying that curtailing government spending will be essential. Monetary responses to economic conditions particularly toward achieving the price stability objective were feeble, partly reflecting fiscal dominance observed for the greater part of the period. It highlights the potential costs of forcing the central bank to accommodate fiscal expansion.

The general absence of a clear response of fiscal and monetary policies to economic conditions, and in particular the inconsistent pattern of responses to output and inflation behaviors perhaps reflects a lack of planned approach to economic management in Nigeria. However, it also signifies the existence of fundamental challenges associated with policymaking and implementation. Many a time, issues such as the timing of policy action, the appropriateness of policy tools, exogenous events, the prevailing political regime, and quality of institutions, among others, determines whether policy actions will have the desired outcomes or not. In any case, the inconsistent pattern of policy responses underscores the need for an integrated and coherent macroeconomic framework with the fiscal and monetary authorities working closely together to achieve the objectives of economic growth and price stability.

Evidence of fiscal and monetary policy coordination was not supported for the full sample and sub-periods when public expenditure was applied as fiscal measure in combination with the money stock growth, likewise for the full sample and sub-sample 1980–1999 applying the overall fiscal balance. However, there was ample evidence of fiscal and monetary policy coordination during 2000–2009 albeit with role reversal. Nevertheless, it was clear that policy coordination permitted both the government and the central bank to address a wider range of economic issues compared to the periods when policies were uncoordinated. In other words, policy coordination is desirable and could be beneficial. The actual performance of output, inflation, and the external balance, which both policymakers were able to cooperatively influence during the period further suggests that policy coordination could improve macroeconomic outcome.

6.2. POLICY RECOMMENDATIONS

Against the backdrop of the findings, the study puts forward the following policy recommendations:

- The government should intensify efforts to diversify the economy toward the non-oil sector to minimize exposure to the volatile and uncertain global oil market, which has had adverse consequences on the economy. In this context, investing in infrastructure needed to promote private sector activity is critical.

- Proper management of oil revenue is essential both to shield the budget from price volatility and to save for future generations in view of the exhaustible oil resources. An Act of the National Assembly passed in May 2011 establishing the Nigerian Sovereign Investment Authority (NSIA), which replaced the controversial Excess Crude Account, is a welcome development. However, in designing and managing the three sovereign wealth funds created by the Act, the NSIA should adhere to international best practices on Sovereign Wealth Fund (SWF) management, as summarized by the 2008 Santiago Principles[4], especially on governance, transparency, accountability and investment policies.

- The federal budgeting process should be underpinned by a strong regulatory framework to eliminate delays and possibly reduce fiscal policy lags. To this end, it may be useful to have an

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[4] Also known as the Generally Accepted Principles and Practices (GAPP) on Sovereign Wealth Funds developed by the International Working Group on Sovereign Wealth Funds (IWGSWF) and to which all members subscribe. Nigeria is not a member.

organic budget law[5], which should harmonize all existing pieces of legislations on the budget in addition to introducing new laws. The law should clearly outline the roles of all the institutions involved in the budget process, penalizing any that fails to meet deadlines. In particular, it should set dates within which the budget must be prepared and approved. In addition, the National Assembly should not have the prerogative to increase the expenditure envelope, or reallocate resources in the budget proposal without agreement with the government.

▪ On the institutional side, the government should have a better control of the budget, and should avoid the practice of supplementary budgeting, to discourage waste. Adhering to guidelines for budget preparation, submission and implementation is critical. In this regard, there will be the need to further strengthen the capacity of the government institutions responsible for policymaking and implementation.

▪ In view of the importance of discretionary policymaking in Nigeria, fiscal policy should be the first choice to stabilize the economy. Monetary policy should follow when fiscal policy fails. But, as evidence suggests, applying both fiscal and monetary policies in a coordinated fashion will yield better outcomes. To ensure a healthy external balance, it may be useful to focus on fiscal policy, especially by curtailing government spending.

▪ Given the apparent failure of monetary policy in influencing inflation and the external balance, there is need for a better understanding of the constraints to monetary

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[5] This refers to a system of laws, which forms the foundation of a government. A Constitution is one form of an organic law.

policymaking through further research on issues, including the impacts of the transmission mechanism and unsupportive fiscal policy.

▪ The inconsistent pattern of fiscal and policy responses to output and inflation behaviors calls for an integrated and consistent macroeconomic framework to bolster policy coordination. At the operational level, a monetary programming framework of the central bank will be helpful in preventing an inconsistent policy mix, as it captures the interactions between monetary and fiscal policies. However, several issues relating to the day-to-day policy implementation will continue to attract close attention, including how government manages its cash balances, the level of credit to the government, liquidity management by the central bank, and debt management.

▪ Monetization of fiscal expansion by the central bank is costly because of the associated loss of inflation control. This mode of deficit financing should therefore be avoided. Beside the regular issuance of government bonds, there is need to explore scope for utilizing other inexpensive and non-debt creating financing options, such as public-private partnerships.

▪ In the short term, fiscal consolidation is essential to mitigate aggregate demand pressures and support the central bank's exchange rate and price stability objectives, especially in view of concerns about government's recent fiscal behavior. To achieve this, it will be essential to complement the expenditure rule with balanced budget and debt rules to impose tighter constraint on fiscal policy, while providing for flexibility where necessary. The rules should be supported with credible punishment for non-compliance to ensure effectiveness. In the medium term, the government should aim to achieve fiscal sustainability to put government finances on a firm footing.

▪ Policy coordination between the government and the central bank is still relatively nascent, and therefore very much less perfect. The gains from policy coordination in the context of achieving macroeconomic stability and improving economic growth could easily be eroded. Thus, it will be useful to further strengthen the coordination arrangement, including by close monitoring of the impact of the interaction of fiscal and monetary policies on the economy.

▪ For sure, one cannot rule out occasional tensions between the government and the central bank about the right policy mix. In this context, it will be essential that both authorities continue to maintain fruitful policy dialogue with each other and with the general public, and monitor current events closely and conduct analysis together.

▪ To further enhance policy coordination, it may be useful to sanction, or penalize an uncooperative behavior between the government and the central bank. The challenge, however, will be to determine what qualifies as one, and have a third party, such as the National Assembly, or the judiciary enforce an appropriate sanction, or penalty, especially given the independent status of the government and the central bank in economic management.

6.3 CONCLUSIONS

Monetary and fiscal policy coordination is an important aspect of the economic decision making process in Nigeria, particularly as the central bank and the government have autonomy in managing the economy. Empirical findings from this study suggests that policy coordination in Nigeria is relatively new and could improve economic performance because it permits both the government and the central bank to address a wider range of economic issues compared to the cases when policies were uncoordinated. What is more, the study indicates

that although the critical elements needed for effective policy coordination existed at different levels, they were generally less well rooted. In this context, the gains from policy coordination could easily be eroded. As such, it is important that the monetary and fiscal authorities continue to work harmoniously together, and further improve the coordination arrangements to achieve better policy outcomes. However, the success of policy coordination in Nigeria could very well hinge on the commitment of the government in maintaining fiscal prudence without compromising monetary policy goals, especially as uncooperative behaviours are not sanctioned, or penalized, as long as they are not unlawful.

Contributing to knowledge, the study has provided an understanding of the nature of macroeconomic policymaking and extent of policy coordination between the central bank and government during the reference period. It further found that monetary management could be very challenging in an environment characterized by fiscal dominance, which has been a source of concern for the central bank and researchers over the years. The study provided evidence that the central bank abandons the price stability objective when it succumbs to pressure to accommodate fiscal deficits. In addition, the study confirmed the pro-cyclicality of fiscal policy in Nigeria pointing out that the exposure of the economy to the uncertain global oil market has adverse consequences. It also uncovered a significant lag effect of fiscal policy on the economy associated with delays in the budget process, a perennial problem in the country. Findings further reinforced the importance of discretionary policymaking, which means that the government should continue to play prominent role in managing the economy. It revealed an inconsistency in policy responses, reflecting an unsystematic approach to economic management.

Nevertheless, the study has not answered all the burning questions in the literature. Further studies should examine policy coordination in more broad terms – analyzing the interaction among three or more economic agents or policymakers in a federal setting and taking account of political regimes. An extension of research should aim to quantify the gains of coordination or the cost of lack of it, perhaps in terms of output and possibly the welfare implications.

Appendix. 1

	Real Gross Dometic Product	Minimun Rediscount Rate	Broad Money (M2)	Inflation	Balance of Payment	Public Expenditure	Overall fiscal Balance	Oil Price
	N'Million	Per cent	N'Million	Per cent	N'Million	N'Million	N'Million	Price of Bonny Light (US$ Per barrel)
1980	31546.8	6.00	14390.0	9.9	2402.2	14968.5	-1975.2	38.80
1981	205222.1	6.00	15541.0	20.9	-3020.8	11413.7	-3902.1	37.10
1982	199685.3	8.00	16886.8	7.7	-1398.3	11923.2	-6104.1	35.60
1983	185598.1	8.00	19368.9	23.2	-301.3	9636.5	-3364.5	30.00
1984	183563	10.00	21600.5	39.6	354.9	9927.6	-2660.4	29.20
1985	201036.3	10.00	23818.6	5.5	349.1	13041.1	-3039.7	28.20
1986	205971.4	10.00	24592.7	5.4	-5667.7	16223.7	-8254.3	14.20
1987	204806.5	12.75	32092.8	10.2	-18424	22018.7	-5889.7	18.50
1988	219875.6	12.75	42780.3	38.3	-20795	27749.5	-12160.9	15.10
1989	236729.6	18.50	46222.9	40.9	-22993.5	41028.3	-15134.7	18.60
1990	267550	18.50	64902.7	7.5	-5761.9	60268.2	-22116.16	24.00
1991	265379.1	14.50	86152.5	13.0	-15796.6	66584.4	-35755.2	20.50
1992	271365.5	17.50	129085.5	44.5	-101405	92797.4	-39532.5	20.00
1993	274833.3	26.00	198479.2	57.2	-42060.4	191228.9	-65157.7	16.00
1994	275450	13.50	266944.9	57.0	-42623.3	160893.2	-70270.6	16.20
1995	281407.4	13.50	318763.5	72.8	-195316	248768.1	1000	17.40
1996	293745.4	13.50	370333.5	29.3	-53152	337217.6	32049.4	21.60
1997	302022.5	13.50	429731.3	8.5	1076.3	428215.2	-5000	19.50
1998	310890.1	14.31	525637.8	10.0	-220675	487113.4	-133389.3	12.80
1999	312183.5	18.00	699733.7	6.6	-326634	947690	-285104.7	71.80
2000	329178.7	13.50	1036080	6.9	314139.2	701059.4	-103777.3	26.10
2001	356994.3	14.31	1315869	18.9	24738.7	1018026	-221048.9	24.50
2002	433203.5	19.00	1599495	12.9	-563484	1018156	-301401.6	25.40
2003	477533	15.75	1985192	14.0	-162298	1225966	-202724.7	29.10
2004	527576	15.00	2263588	15.0	1124157	1426200	-172601.3	38.70
2005	561931.4	13.00	2814846	17.9	1340646	1822100	-161406.3	55.43
2006	595821.6	12.25	3116272	8.2	1821187	1938002	-101397.5	66.46
2007	634251.1	9.00	5809826	5.4	1126787	2450897	-177237.1	74.96
2008	674889	9.75	9167068	11.6	196400	3240820	-47378.5	101.20
2009	718977.3	6.40	10730793	12.4	-1548400	3456900	-810000	62.10

Source: Central Bank of Nigeria, Statistical Bulletin, 50 Years Anniversary Edition, 2008 and Annual Report and Statements of Account 2009

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