The Impact of Corporate Governance on Monetary Policy: The Nigerian Experience

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ABSTRACT
Corporate governance in banks owes its significance to the role of banks in economic stabilization, and the substantial risks and negative consequences associated with improper banking practices. The main objective of this study is to determine the relationship between corporate governance and monetary policy in Nigeria. The study employed annual time series data sourced from the Central Bank of Nigeria and Nigerian Stock Exchange. Monetary policy was captured using the broad money supply while corporate governance was proxied by various indices of corporate governance. Autoregressive Distributive Lag (ARDL) and granger causality estimation techniques were used for the analysis. The granger causality results showed that no bidirectional causality was found between corporate governance and monetary policy. The bound test results showed that a long run relationship exists among the variables in the estimated equation. This signifies the relevance of these variables in promoting monetary stability in Nigeria. The study recommends that; there should be transparency in the implementation of corporate governance so that the shareholders can effectively judge whether their interests are being served; the government should establish institute of Corporate Governance for teaching and promoting good corporate governance; the regulatory authorities should increase their oversight functions and scope of examination of deposit money banks (DMBs) to encourage compliance with laid down rules and regulations; the management staff including the auditors both internal and external and enterprise risk managers should play important roles in ensuring that there exists a sound internal control system in their banks and that laid down procedures is reviewed regularly; the new code of corporate governance for banks should be strictly adhered to by all banks in the country, as this will enable banks to operate in a safe and sound manner and as such, lead to restoration of public confidence in the banking system, thus, ensuring a better economy in the country.

Keywords: *Corporate governance, monetary policy, Autoregressive Distributive Lag (ARDL), deposit money banks (DMBs).*

Introduction

The banking system plays a pivotal role in the economic growth and development process in developing economies. In addition, as a result of globalization, the importance of banking in cross-border finance and investment has grown in leaps and bounds. Given that monetary policy instruments are used to control the activities of commercial banks, it suggests that monetary policy has a far-reaching impact on financing conditions in the economy, not just the costs, but also the availability of credit, and the risk appetite of commercial banks, amongst others. Monetary policy also influences expectations about the future direction of economic activity and inflation, thus affecting the prices of goods, asset prices, exchange rates as well as consumption and investment (Olumide, 2009; Nwafor et al., 2017).

The link between monetary policy and corporate governance in the banking industry is established through the relationship between macro-prudential regulations and corporate governance practices of commercial banks. In essence, monetary policy affects corporate governance practice of commercial banks through its macro-prudential regulations for commercial banks. Macro-prudential policies in the banking industry are a set of regulatory measures put in place by the monetary authorities to control and abate increases in systemic risk in commercial banks, which is partly associated with corporate governance imperfections or problems. Monetary and macro-prudential policies are clearly linked as both seek to achieve same macroeconomic goals, namely: price stability, attractive interest rate, stable exchange rate, financial system stability, and sustainable economic growth and development (Nnanna, 2001). Corporate governance imperfections relate to asymmetric information problems such as moral hazard and adverse selection in banking business which result in systemic risk (that is, negative externalities) with adverse consequences on the banking sector performance in particular and the macroeconomic system in general (Aliyu &Englama, 2009).

Globally, corporate governance has gained recognition following the substantial changes in the role of private sector in economic development, and the increased awareness of the important role of commercial banks in the economy, as the practice of separating ownership from management in modern banking system has become more widespread. Corporate governance in banks owes its significance to the role of banks in the economy, and the substantial risks and negative consequences associated with improper banking practices (Kyereboah-Coleman, 2007). It is highly important as banking business is very complex and supervisory authorities cannot singlehandedly supervise banking risks. In this regard, Basel II Accord on the enhancement of corporate governance in banking institutions indicates that the supervision of the commercial banks by central banks cannot be done efficiently and effectively in the absence of good corporate governance. Consequently, the safety and soundness of banks require intervention and action on the part of shareholders and their representatives on the boards of directors (Omankhanlen & Taiwo, 2013).

Predicated on the critical role of banks in the functioning of the Nigerian economy, the issue of corporate governance in the banking sector has been given the front burner status by the issuance of codes of corporate governance by the Securities and Exchange Commission (SEC) and the Central Bank of Nigeria. The Nigerian banking system therefore implements the enterprise risk management (ERM) as enshrined in the codes of corporate governance (Abdullatif &Kawuq, 2015). The CBN in 2014, came up with improved corporate governance principles for commercial banks which constitutes part of its macro-prudential policies. The CBN stopped banks with huge non-performing loans (NPLs) and low capital base from paying

dividends effective from January 2017. This is due to the rising non-performing loans and the need to stop further erosion of the capital base of the banks. Consequently, commercial banks in Nigeria are meant to grow their capital with retained earnings as against the previous practice of banks paying out a greater proportion of the profit after tax (PAT) as dividends irrespective of their risk profile and the need to build resilience in the banking sector through adequate capital buffers.

The new CBN corporate governance measures stipulate that boards of commercial banks must recommend dividend payout based on effective risk assessment and economic realities. It maintains that no bank shall be allowed to pay dividend out of its "reserves" and that banks shall submit their board-approved dividend payout policy to the CBN for approval before any payment is allowed (CBN, 2016). These corporate governance measures are parts of the initiatives of CBN to ensure the soundness of the banking sector in order for it to be strategically placed to support growth and improve the welfare of the people.

Statement of the problem

In an attempt to strengthen the banking system through good corporate governance and normalize some financial indices, Nigeria introduced market-oriented reforms in the financial sector following the adoption of deregulation policies in the 1980s. More importantly, the institutional set-up within which firms operated in the regulated era has undergone substantial transformation. Notwithstanding these reforms and measures, it appears that corporate governance failures still remain a critical issue that hinders the remarkable performance of banks, and by extension, economic development in Nigeria. Many of the banks that were liquidated in the 1990s recorded great fraudulent activities with its consequential monumental losses. According to Umoh (1997), the sum of ₦8.2billion was involved in bank frauds between 1991 and 1996. The worst recorded fraudulent activities were in 1999 when the sum of ₦7.4billion was reported, while an actual loss of N2.7billion was expected. A great deal of the frauds perpetuated in 14 liquidated banks were due to insider abuse (Odey et al., 2017). Many banks in Nigeria, for instance, experienced losses during the 2008 financial crises due to their exposure to the capital market through subprime lending and the downturn in oil and gas prices. The then Governor of CBN, Sanusi Lamido Sanusi, identified eight factors that contributed to the crisis in the Nigerian banking industry to include: lack of good corporate governance in the banks, lack of disclosure and transparency of the banks in financial reporting, serious gaps in regulatory frameworks and regulations, an imbalance between supervision and implementation, amongst others (CBN, 2012). In other words, the banking system is still fraught with unethical practices that are at variance with good corporate governance principles. This is with respect to poor asset quality resulting from non-adherence to the risk management framework, use of spurious documents to purchase foreign exchange, and making inaccurate returns on financial and liquidity positions. Poor corporate governance results from unprofessional board members of these banks that experience weak capital inadequacy to continue to meet their financial obligations to their various customers and stakeholders. Poor board composition of the financial institutions in Nigeria gave rise to non-compliance with monetary policy which resulted in insider abuse (CBN, 2004). The unprofessional board size, the incompetent diversity in board composition and audit committee members who lacked knowledge of accounting and financial reporting resulted in poor lending habit and embarking on projects not supported with liquidity.

Poor corporate governance has led to reduced access to external financing by firms, high cost of capital and associated low firm valuation which makes investment less attractive to investors, collapse of some banks, as we witness in the early 1990s and post consolidation era, thereby dampening economic growth and development. All these tend to reduce the potency of the banking system in the development process. This study therefore seeks to empirically establish the impact and causal links between corporate governance and monetary policy in Nigeria.

REVIEW OF RELATED LITERATURE

Concept of Corporate Governance

Corporate governance has been conceptualized by different scholars with some variations in meanings. Corporate governance is described as the set of rules, structures and procedures by which investors assure themselves of getting a return on their investment and ensure that managers do not misuse the investors' funds (Shleifer & Vishny, 2003). Rogers (2006) opines that corporate governance is about building credibility, ensuring transparency and accountability as well as maintaining an effective channel of information disclosure that would foster good corporate performance. It is also about how to build trust and sustain confidence among the various interest groups that make up an organization. Similarly, Salvioni, Gennari and Bosetti (2016) posit that corporate governance is a combination of structures and processes. While the structure refers to all the bodies responsible for the firm's direction and control, the processes consist of the activities developed to satisfy the stakeholders 'expectation. Corporate governance therefore specifies the ways by which corporations are directed and guarded. The structure of corporate governance outlines the way in which stakeholders' rights and responsibilities are shared and distributed. Corporate governance provides a framework through which management and boards provide a transparent, fair and efficient environment that are needed to satisfy the interest of all the stakeholders (management, suppliers of capital, government, creditors, the host communities, depositors and other stakeholders) as well as to achieve the long run goals of an organization while complying with the regulatory and legal requirements of the industry (Bairathi, 2009). In this study, corporate governance was measured with vectors of corporate governance variables such as audit activities; policy on insider trading/market abuse; risk management committee; disclosure and transparency; and shareholders right.

Monetary policy

The term monetary policy has been defined by institutions and experts from different perspectives. According to CBN (2011), monetary policy is defined as a deliberate action of the monetary authorities to influence the quantity, cost and availability of money and credit with a view to achieving desired macroeconomic objectives of internal and external balances. It is further seen as the combination of measures designed to regulate the value, supply and cost of money in the economy in consonance with the expected levels of economic activities. The monetary authorities do this by tinkering with money supply and nominal interest rates in order to manage the quantity of money in the economy.

Monetary policy involves the composition of the central bank's portfolio of assets and liabilities to change the total volume of high-powered money in order to control nominal variables like the price level and interest rates, so as to possibly influence real variables, such as

output and employment (CBN, 2010). Monetary policy is one of the macroeconomic policies used by nations to manage their economies. It entails those actions initiated by the central bank which aims at influencing the cost and availability of credit. It covers the gamut of measures or combination of packages intended to influence or regulate the volume, prices as well as direction of money in the economy. Specifically, it permeates all the concerted efforts by the monetary authorities to control money supply and credits conditions for the purpose of achieving diverse macroeconomic objectives. The monetary variable used to capture monetary policy in this study include broad money supply (M_2) and exchange rate.

Corporate governance and monetary policy

Corporate governance in the banking sector requires judicious and prudent management of resources and the preservation of resources (assets) of corporate firm; ensuring ethical and professional standards and the pursuits of corporate objectives, it seeks to ensure customers' satisfaction, high employee morale and the maintenance of market discipline, which strengthens and stabilizes the banking system through efficient monetary policy framework (John & Ibenta, 2016). Corporate governance is a system on the basis of which companies are directed and managed. It is upon this system that specifications are given for the division of responsibilities between the parties (board of directors, supervisory board, the management and shareholders) and formulate rules and procedures for adopting decisions on corporate matters by the monetary authorities.

Although corporate governance in the private sector is of general interest to the Nigerian public, that of banking industry is of particular interest because of the catalytic role of banks in any economy. Their corporate governance is of prime interest to government, depositors, shareholders and the public at large. While depositors are more interested in the safety and returns on their deposits as well as quality of services rendered by their banks, government and the public want a safe, sound and stable banking industry. Shareholders (owners) are more interested in their banks' profitability, soundness and good health; workers are interested in their sustained employment through the continued existence and profitability of their employer-banks (Omankhanlen & Taiwo, 2013). The banking industry itself is after the retention of public confidence through the enthronement of good corporate governance which remains of utmost importance given the role of the industry in the mobilization of funds, the allocation of credit to the needy sectors of the economy, the payment and settlement system and the implementation of monetary policy etc.

Theoretical Framework: The Agency theory

The agency theory was first introduced by Ross and Mitnick in 1973, which expresses the conflict of interest between principal (owners) and agents (managers), known as an "agency problem". Agency relationship is defined as one in which one or more persons (the principal(s) engage another person (the agent(s) to perform some services on their behalf which involves delegating some decision-making authority to the agent. The central idea of this theory is that there exists a conflict of interest between owner and management. Berle and Means (1967) argued that when shareholders are not able to monitor management properly, the company assets might be used for the welfare of management instead of maximizing shareholders' wealth. This

theory is relevant to this study as it shows how board of directors, as agents to the shareholders, should ensure that the interest, as well as the risks, of the shareholders in the banking sector is taken care of.

Empirical Studies

Haan & Sterken (2006) examined capital structure, corporate governance, and monetary policy using firm-level evidence for the Euro Area. The study contributes to the empirical evidence on the credit channel of monetary policy in the euro area by providing firm level evidence on the relationship between the impact of monetary policy on firm balance sheets and the corporate governance characteristics of the firms. A sample of half a million European firm-year observations, extending over the period 1990-1997 was analyzed. First, they presented four alternative indicators of monetary policy for the eleven (11) euro countries plus the United Kingdom. Second, they analyzed the influence of governance structure on the monetary impact on firms' balance sheets. The results indicate that private firms, which appear to be more dependent on bank debt for external funds, are more susceptible to monetary policy shocks than public firms- quoted and unquoted.

Saibal & Rudra (2004) investigated how monetary policy matter for corporate governance utilizing firm-level evidence for India. The paper assembles data on over 1,000 manufacturing and services firms in India for the entire post-reform period from 1992 through 2002 to examine the association between corporate governance and monetary policy. The findings suggest that (a) public firms are relatively more responsive to a monetary contraction vis-à-vis their private counterparts; and, (b) quoted firms lower their long-term bank borrowings in favour of short-term borrowings, post monetary tightening, as compared with unquoted firms. A disaggregated analysis based on firm size and leverage above a certain threshold validates these findings. The study concludes by analyzing the broad policy implications of these findings.

Subba & Dollery (2004) examined corporate governance and financial policies on influence of board characteristics on the dividend policy of Australian firms. The purpose of the paper is to examine the influence of board structure on dividend policy of Australian corporate firms. The sample consists of 413 non-financial firms that are part of the All-Ordinaries Index. The findings of the study are robust with alternative measures of variables employed and are not influenced by the global financial crisis. The findings have implications for corporate governance policies and the payout policies. The study found that board independence has a significant positive influence on the dividend policy of Australian firms.

Adegbie, Akintoye & Ashaolu (2019) investigated the effect of corporate governance on the financial stability of deposit money banks in Nigeria. Ex-post facto research design was adopted for the study. The population of the study comprised the 21 listed deposit banks on the Nigerian stock exchange as at September 2016. The study made use of a total of 10 banks as sample size which was categorized under the listed deposit money banks in Nigeria. These banks were selected using stratified sampling technique. Data were collected from the annual reports for the period of ten years (2007-2016). Descriptive Statistics test were carried out, Hausman test and cross-section random effect test were analyzed. The analysis revealed that all corporate governance variables have a positive and negative effect on capital adequacy. Corporate governance has a positive and negative effect on financial stability. The study concluded that corporate governance has a significant effect on financial stability. This means that as the content of corporate governance improves financial stability increases.

Hopt (2021) examined corporate governance of banks and financial institutions on the basis of economic theory, supervisory practice, evidence and policy. It was revealed that banks practicing good corporate governance in the traditional, shareholder-oriented style fared less well than banks having less shareholder-prone boards and less shareholder influence.

El-Chaarani, Abraham and Yahya (2022) analyzed the impact of internal and external corporate governance mechanisms on the financial performance of banks in the under-researched Middle Eastern and North African (MENA) region during the COVID-19 pandemic period. The fixed effects regressions and two-stage least squares were used to analyze the data. Results showed that the corporate governance measures of presence of independent members on the board of directors, high ownership concentration, lack of political pressure on board members, and strong legal protection, had positive effects on bank financial performance. Corporate governance mechanisms, such as performance-based compensation, the presence of women on boards, moderate size of the board, and anti-takeover mechanisms had no significant impact on bank performance during the crisis period.

Some scholars have used different estimation techniques in establishing the nexus between monetary policy and corporate governance as reviewed above. In their respective studies, they adopted multiple regression models; ordinary least squares (OLS) techniques but none of the studies to the best of my knowledge have been able to link monetary policy and corporate governance in the Nigerian banking sector applying the autoregressive distributive lag (ARDL) estimation technique. Data gap is equally observed in the literature. Cross-country data and annual data were mostly used in the studies reviewed. According to Lederman and Malony (2003), results obtained from the use of cross-country data and panel in studies differs. In this study, annual data is used in the investigation of the relationship between monetary policy, and corporate governance in Nigeria.

METHODOLOGY

Research Design

This empirical study adopted the *ex-post facto* research design. This is premised on the fact that the events had already taken place before the present investigation. A multiple regression analysis was utilized with various econometric techniques such as Augmented Dickey-Fuller (ADF) unit root test, granger causality test and autoregressive distributive lag model also known as bound testing co-integration.

Model Specification

This study on corporate governance and monetary policy is anchored on the stewardship theory. According to Stewardship theory, directors are regarded as the stewards of the company assets and are pre-disposed to act in the best interest of the shareholders (Mallin, 2019). Stewardship theory relates to the board's task of providing support and advice to management. Applying the stewardship theory, the study includes audit committee activities, board structure and responsibilities, disclosure and transparency and shareholders' rights in the model. The model is specified as follows:

$$M2 = f(CGOV_1, CGOV_2, CGOV_3, CGOV_4, CGOV_5, GEXP, EXR) \quad 3.1$$

$$M2 = \mu_0 + \mu_1 CGOV_{it} + \mu_2 CGOV_{it} + \mu_3 CGOV_t + \mu_4 CGOV_{it} + \mu_5 CGOV_{it} + \mu_6 GEXP_{it} + \mu_7 EXR_{it} + \varepsilon_{it} \quad 3.2$$

Where:

The dependent variable (monetary policy) is captured by broad money supply (M_2), while the independent variable (corporate governance) is represented by audit committee activities, board structure and responsibilities, disclosure and transparency and shareholders' rights. The data on the variables was extracted from the financial statements of the annual reports and accounts of the sampled quoted commercial banks in Nigeria.

The first corporate governance variable, audit committee ($CGOV_1$) is a dummy variable on audit activities and it indicates the number of contraventions/sanctions reported by audit on legal and regulatory requirements. $CGOV_1$ takes on value of 1 if the audit reported and discussed with specific activities/examples/ figures relevant to the reporting period and 0 if not reported. It is expected that reported cases of contraventions is a red alert to deviation from adherence to good corporate governance principles, and are expected to be addressed promptly. The second corporate governance variable ($CGOV_2$) is also a dummy variable indicating if the bank had a dedicated committee solely charged with monitoring and managing the risk management efforts within the bank (*risk management committee*). It takes on value of 1if the bank had a dedicated committee solely charged with monitoring and managing the risk management efforts within the bank and 0 if otherwise. Banks, for which the variable *risk management committee* has a value of zero, have either no committee in charge of risk management at all or the audit committee assumes the responsibility. We would expect that having a risk committee in general indicates a stronger risk management and therefore better corporate governance. The third corporate governance variable ($CGOV_3$) is the presence to policy on insider trading, trading in securities and market abuse which is used as one of the indicators of board structure and responsibilities. It takes on the value of 1 if reported and discussed with specific activities, examples and figures relevant to reporting period, but takes on 0 if otherwise. The fourth corporate governance variable ($CGOV_4$) is disclosure and transparency as measured by the statement of compliance with the requirement of established Codes of Corporate Governance. There are international codes of corporate governance that all the banks are expected to comply with. Reported cases of compliance assume the value of 1 while noncompliance with these codes means that it will take the value of 0. Lastly, the fifth corporate governance variable is shareholders right as measured by analysis of capital market performance (share price, traded volume and value, stock index and forecasts). If capital market performance is reported in detail, it takes on the value of 1, if they are not reported in any year, it takes on the value of 0. Reporting in detail the capital market performance will help to protect the shareholders right and promotes the confidence of the market stakeholders.

ANALYSIS AND DISCUSSION OF RESULTS

Descriptive statistics and matrix of correlations

The descriptive statistics of the variables is reported in table 1a. According to the table, Nigeria witnessed low volume of money supply within the period of this study. This is evidenced

by the statistics of the mean, median and minimum of M_2 of 23.38, 19.40 and 87.80 billion, respectively. Perhaps as a result of low supply of monetary aggregates, corporate governance indices contracted as the maximum index was 1 percent within the period under review. Furthermore, there are numbers of corporate governance factors considered responsible for the inefficiency of the financial system in Nigeria. Such factors as contravention of legal and regulatory requirements, non-adherence to policy on insider trading/market abuse; presence of risk management committee; lack of disclosure and transparency, amongst others.

Considering the normality of the data set, the variables are normally distributed given the respective values of Skewness, Kurtosis and Jarque-Bera test. The values of the standard deviation in table 1a depict the variation of the variables from their true values over the period under review.

The correlation matrix represented in table 1b shows that a number of the pair wise correlations are high. Given the result, variables that are highly correlated were not included in the equation to circumvent the issue of multi-collinearity that may affect the reliability of the results.

TABLE 1a

Descriptive Statistics

	M2	***CGOV1***	***CGOV2***	***CGOV3***	***CGOV4***	***CGOV5***	***EXR***	***GEXP***
Mean	*23.38718*	*0.602564*	*0.615385*	*0.423077*	*0.589744*	*0.448718*	*91.28205*	*2.369872*
Median	*19.40000*	*1.000000*	*0.500000*	*0.500000*	*1.000000*	*0.500000*	*102.1000*	*0.884000*
Maximum	*87.80000*	*1.000000*	*1.000000*	*1.000000*	*1.000000*	*1.000000*	*306.2000*	*14.40000*
Minimum	*-2.400000*	*0.000000*	*0.000000*	*0.000000*	*0.000000*	*0.000000*	*0.600000*	*-5.979000*
Std. Dev.	*17.95298*	*0.446912*	*0.313334*	*0.452165*	*0.498310*	*0.455881*	*87.57366*	*4.013478*
Skewness	*1.474507*	*-0.411383*	*-0.196146*	*0.305871*	*-0.364900*	*0.202669*	*0.718648*	*1.201126*
Kurtosis	*5.878787*	*1.409400*	*2.415400*	*1.323988*	*1.133152*	*1.264906*	*2.790350*	*4.822651*
Jarque-Bera	*27.59916*	*5.211297*	*0.805431*	*5.172772*	*6.528810*	*5.159133*	*3.428385*	*14.77591*
Probability	*0.000001*	*0.073855*	*0.668502*	*0.075292*	*0.038220*	*0.075807*	*0.180109*	*0.000619*
Sum	*912.1000*	*23.50000*	*24.00000*	*16.50000*	*23.00000*	*17.50000*	*3560.000*	*92.42500*
Sum Sq. Dev.	*12247.76*	*7.589744*	*3.730769*	*7.769231*	*9.435897*	*7.897436*	*291427.5*	*612.1042*
Obs.	*39*	*39*	*39*	*39*	*39*	*39*	*39*	*39*

Table 1b
Correlation Matrix

	M2	*CGOV1*	*CGOV2*	*CGOV3*	*CGOV4*	*CGOV5*	*EXR*	*GEXP*
M2	*1*	*0.143663*	*0.058980*	*-0.051669*	*-0.009722*	*-0.014712*	*-0.091291*	*0.027305*
CGOV1		*1*	*0.711951*	*0.753982*	*0.702914*	*0.766065*	*0.632164*	*0.453694*
CGOV2			*1*	*0.753702*	*0.648240*	*0.725487*	*0.765245*	*0.542406*
CGOV3				*1*	*0.790603*	*0.769754*	*0.692791*	*0.565621*
CGOV4					*1*	*0.731685*	*0.793543*	*0.456035*
CGOV5						*1*	*0.798314*	*0.568384*
EXR							*1*	*0.724689*
GEXP								*1*

Source: Authors' computation, using Eviews 9

Lag length selection

The efficiency and validity of an error correction model depends on the lag structure. The study used VAR lag order selection criteria to determine the lag lengths. The study employed the Akaike Information Criterion (AIC) and Schwarz Criterion (SC) and the result shows one optimal lag length in the monetary policy and corporate governance model. In order to reduce the possibility of underestimation whilst maximizing the likelihood of recovering the true lag (Venus, 2004), the study used one as the maximum lag length.

Table 2
Lag Ordered Selection

Monetary policy and corporate governance model	0	NA	21.36037	21.70161
	1	2194.799*	-48.51756*	-45.44637*

Unit root test results

The Augmented Dickey Fuller and the Philip-Perron unit root tests were conducted to examine the stationarity condition of the variables. As indicated in table 3, M_2 was stationary at levels in both ADF and PP tests. GEXP was stationary at level in PP test but stationary at first difference in ADF test. In other words, the variables are integrated of order zero (i.e., I (0)). Conversely, EXR, GEXP, $CGOV_1$, $CGOV_2$, $CGOV_3$, $CGOV_4$, and $CCGOV_5$ became stationary after first difference using both criteria. The aforementioned variables are therefore integrated of order one i.e., they are I (1).

Where some of the variables are I (0) while others are I (1) one suggests the problem of unit root in the equations. It becomes imperative to perform co-integration tests to determine the presence of long equilibrium relationship amongst the variables in the equation. The study adopts the ARDL bound testing technique for co-integration, as the variables are integrated of diverse orders (i.e., order zero and order one).

TABLE 3
ADF and Philip-Perron unit root test results

Variables	*ADF* *Level*	*1st Difference*	*Order of integration*	*Level*	*PP* *1st Difference*	*Order of integration*
M2	*-3.429467***	-	*I(0)*	*-3.179244***	-	*I(0)*
GEXP	*-0.731870*	*-4.734095***	*I(1)*	*-3.239086***	-	*I(0)*
EXR	*1.926486*	*-9.149078***	*I(1)*	*1.338609*	*-8.889255***	*I(1)*
$CGOV_1$	*-1.304470*	*-6.164414***	*I(1)*	*-1.231031*	*-6.164479***	*I(1)*
$CGOV_2$	*-1.561473*	*-6.343130***	*I(1)*	*-1.526752*	*-6.363702***	*I(1)*
$CGOV_3$	*-0.474080*	*-6.343131***	*I(1)*	*-0.401306*	*-6.363702***	*I(1)*
$CGOV_4$	*-1.142141*	*-6.164413***	*I(1)*	*-1.142114*	*-6.164417***	*I(1)*
$CGOV_5$	*-0.585853*	*-6.343130***	*I(1)*	*-0.485556*	*-11.64746***	*I(1)*

Source: Researcher's computation, 2022.
Note: Mackinnon critical values for ADF and PP at 1, 5 and 10% levels are -3.67, -2.96 And -2.62 respectively. *, ** and *** means significant at 1, 5 and 10 respectively.

Co-integration test results

From the bound testing result reported in Table 4, long run relationship exists amongst the variables in the estimated equation, given that the value of the F-statistic is greater than the critical value at five per cent level in both the upper and the lower bounds. Therefore, the null hypothesis of absence of co-integration is rejected, while the study proceeds to estimate the long run coefficient of the equation.

TABLE 4
Co-integration test results

		5% critical value			
Equations	K	F-Stat	I (0)	I (1)	Outcome
M_2 ($CGOV_1$, $CGOV_2$, $CGOV_3$, $CGOV_4$, $CGOV_5$, EXR, GEXP)	*7*	*6.28*	*2.32*	*3.5*	*Co-integration*

Note: K =number of parameters
Source: Researcher's computation, 2022.

Granger causality test results

From table 5, on the nexus of corporate governance and monetary policy, unidirectional causality was found between audit and money supply, while policy on insider trading/market abuse, risk management committee, disclosure and transparency, shareholders right have bidirectional relationship

with monetary policy in the model.

Granger Causality Test

Table 5

Null Hypothesis:	*Obs*	*F-Statistic*	*Prob.*
CGOV1 does not Granger Cause M2	*38*	*0.03444*	*0.8538*
M2 does not Granger Cause CGOV1		*0.04764*	*0.8285*
CGOV2 does not Granger Cause M2	*38*	*1.08329*	*0.3051*
M2 does not Granger Cause CGOV2		*0.02411*	*0.8775*
CGOV3 does not Granger Cause M2	*38*	*2.13217*	*0.1532*
M2 does not Granger Cause CGOV3		*0.74909*	*0.3927*
CGOV4 does not Granger Cause M2	*38*	*0.01193*	*0.9137*
M2 does not Granger Cause CGOV4		*0.16767*	*0.6847*
CGOV5 does not Granger Cause M2	*38*	*0.26927*	*0.6071*
M2 does not Granger Cause CGOV5		*0.00738*	*0.9320*
EXR does not Granger Cause M2	*38*	*0.42745*	*0.5175*
M2 does not Granger Cause EXR		*2.03065*	*0.1630*
GEXP does not Granger Cause M2	*38*	*0.20858*	*0.6507*
M2 does not Granger Cause GEXP		*0.14138*	*0.7092*

ARDL Co-integration Results

The long run results of monetary policy and corporate governance model is reported in table 6a. From the results and in consonance with theoretical expectation, a positive relationship exists between corporate governance ($CGOV_1$), ($CGOV_2$), ($CGOV_5$) and broad money supply in the long run, with coefficients of 60.38, 18.33 and 39.36, respectively. This implies that the increase in reporting audit activities and the detailed analysis of capital market performance promote monetary policy in Nigeria in the long run. The relationship between corporate governance variables ($CGOV_3$) and ($CGOV_3$) which measures policy on insider trading, trading in securities and market abuse and broad money supply was positive. Therefore, a 1 per cent increase in risk management committee, policy on insider trading, trading in securities and market abuse and disclosure and transparency will lead to a decrease in money supply by 2.56.72 and 26.81 percent, respectively. According to the result, exchange rate (EXR) has a negative relationship with broad money supply (M2) in Nigeria in the long run. The magnitude of the coefficient shows that a 1 percent increase in exchange rate in the long run will lead to a 0.19 percent decrease in money supply, ceteris paribus. Government expenditure (GEXP) and money supply were positively related in the long run, and statistically insignificant. Hence, a 1 per cent increase in government expenditure will lead to about 1.95 per cent increase in money supply.

The short run results of monetary policy and corporate governance is reported in table 6b. From the results, a positive relationship exists between corporate governance ($CGOV_1$), ($CGOV_2$), ($CGOV_5$), and money supply in the current. The values of the coefficients of 46.94, 14.25 and 30.60 imply that an increase in corporate governance ($CGOV_1$) $CGOV_2$), and ($CGOV_5$) by 1 percent will result to an increase in money supply by 46.94, 14.25 and 30.60 percent, respectively. However, a negative relationship exists between corporate governance ($CGOV_3$), ($CGOV_4$) and money supply at current period. A 1 per cent

increase in (CGOV$_3$) and (CGOV$_4$) will lead to a decrease in money supply by 44.09 and 20.84 percent, respectively. According to the short run result, exchange rate (EXR) has a negative and insignificant relationship with money supply (M2) at current period. The magnitude of the coefficient shows that a 1 percent increase in exchange rate in the short run will lead to about 0.14 percent fall in money supply, ceteris paribus. Government expenditure (GEXP) and money supply are positively related in monetary policy-corporate governance model in the short run. Hence, a 1 per cent increase in government expenditure will lead to about 1.51 per cent increase in money supply.

The error correction mechanism (ECM) has the correct sign and size. The ECM coefficient of -0.777 indicates that, it takes about 78 percent for the short run disequilibrium to adjust to the long run equilibrium within the year. The t-statistic of -4.028 showed that the error correction term is statistically significant at 5 percent level of significance. The R-squared value of 0.6261 and the value of R-squared adjusted of 0.5264 indicates that about 53 percent of total variation in money supply is explained by the various indices of corporate governance, exchange rate and government expenditure and about 47 percent was unexplained which may be accounted for by other variables not included in the model. The F-statistic of about 16.280 shows that all the variables in the model are together as a group statistically significant which means that the model has a good fit. The Durbin-Watson (D-W) statistic of 1.9256 indicates no autocorrelation in the model.

TABLE 6: Long run coefficients of monetary policy and corporate governance equation
Dependent variable: M2

Variable	*Coefficient*	*Std. Error*	*t-Statistic*	*Prob.*
CGOV1	*60.383733*	*20.308622*	*2.973305*	*0.0058*
CGOV2	*18.338552*	*19.803225*	*0.926039*	*0.3618*
CGOV3	*-56.721613*	*34.369956*	*-1.650325*	*0.1093*
CGOV4	*-26.810303*	*15.898680*	*-1.686323*	*0.1021*
CGOV5	*39.368286*	*32.871405*	*1.197645*	*0.2404*
EXR	*-0.190138*	*0.116726*	*-1.628933*	*0.1138*
GEXP	*1.951235*	*1.272534*	*1.533346*	*0.1357*
C	*10.702560*	*9.216266*	*1.161269*	*0.2547*

TABLE 6b: Short run dynamics result of monetary policy and corporate governance equation.
Dependent variable: D (M2)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(CGOV1)	46.944448	20.315362	2.310786	0.0279
D(CGOV2)	14.257038	15.858059	0.899041	0.3758
D(CGOV3)	-44.097387	25.779585	-1.710555	0.0975
D(CGOV4)	-20.843277	13.355296	-1.560675	0.1291
D(CGOV5)	30.606297	25.323024	1.208635	0.2362
D(EXR)	-0.147820	0.106276	-1.390915	0.1745
D(GEXP)	1.516959	1.073816	1.412680	0.1680
CointEq(-1)	-0.777435	0.192969	-4.028803	0.0004

R-squared	0.626142		
Adjusted R-squared	0.526447		
F-statistic	16.28055	Durbin-Watson stat	1.925643
Prob(F-statistic)	0.000087		

Source: Researcher's computation (2022)

Discussion of findings

From the granger causality result, a bidirectional relationship was found between broad money supply and corporate governance. However, there was a unidirectional relationship between exchange rate, government expenditure and monetary policy. These results indicate that increase/decrease in these variables causes increase/decrease in monetary policy. The bound test result shows that a long run relationship exists among the variables in the estimated equation. Therefore, the null hypothesis of absence of co-integrated is rejected while the alternative hypothesis is retained. This signifies the relevance of these variables in stimulating monetary stability in Nigeria. On the nexus of corporate governance and monetary policy equation, it was found that a negative relationship exists between corporate governance variables such as the audit activities and shareholders rights in the long run. This implies that the reporting audit activities and the shareholders rights do not promote monetary policy in Nigeria in the long run. However, the relationship between the risk management committee, policy on insider trading, trading in securities and market abuse as well as disclosure and transparency, and monetary policy was positive in the long run thereby influencing monetary policy in Nigeria. These findings are in consonance with the views of Subba & Dollery (2004); and Adegbie, Akintoye & Ashaolu (2019) who opined that corporate governance significantly impact on the monetary policy and financial stability of nations.

Conclusion and Recommendations

The study explored the relationship between corporate governance and monetary policy in Nigeria from 1980-2019 adopting the autoregressive distributive lag model. The study observed that changes in monetary policy as well as the inculcation of corporate governance in firms' management structure affect the stability of the monetary system in the country. Corporate governance variables such as audit activities; risk management committee; policy on insider trading, trading in securities and market abuse, disclosure and transparency as well as shareholders rights relatively have much impact on monetary policy in Nigeria. In line with the findings of the study, the following recommendations are made: there should be transparency in the implementation of corporate governance so that the shareholders can effectively judge whether their interests are being served; the government should establish institute of Corporate Governance for teaching and promoting good corporate governance; the regulatory authorities should increase their oversight functions and scope of examination of deposit money banks (DMBs) to encourage compliance with laid down rules and regulations; the management staff including the auditors both internal and external and enterprise risk managers should play important roles in ensuring that there exists a sound internal control system in their banks and that laid down procedures is reviewed regularly; the new code of corporate governance for banks should be strictly adhered to by all banks in the country, as this will enable banks to operate in a safe and sound manner and as such, lead to restoration of public confidence in the banking system, thus, ensuring a better economy in the country.

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