

Original Article

Monetary–Fiscal Policies Coordination and Business Sustainability in Nigeria

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Abstract: Price stability, balance of payments balance, stable and sustainable business development, and economic growth that can improve people's quality of life are the primary objectives of macroeconomic policies in most countries (Ojo, 2000). Fiscal policy and monetary policy are two important tools that governments use to achieve economic stability in the economy (Wren-Lewis, 2011). Monetary policy uses financial tools, including the money supply, credit, and interest rates, to accomplish macroeconomic objectives. In contrast, fiscal policy uses government expenditures, involving taxes and borrowing, to ascertain the economy's overall demand. This study used the ARDL model to identify how fiscal and monetary policies contributed to Nigeria's economic expansion and, in turn, promoted corporate sustainability. Monetary and fiscal policies were the independent variables, and real gross domestic product was the dependent variable. Interest rates and inflation rates were included as control variables. The results of the ARDL modeling study showed that monetary policy, excluding interest rates, is highly responsive to changes in fiscal policy, but the reverse is not true. The long-term and short-term signs of inflation are negative. This means that higher inflation rates have a negative impact on economic performance. Therefore, it is suggested that the government initiates an unproductive dialogue and implements complementary measures and effective communication between monetary and fiscal policy.

Keywords: Monetary Policy, Fiscal Policy, Business Sustainability, Economic Growth.

I. INTRODUCTION

The chapter looked at how fiscal and monetary policies interact to support business development in Nigeria. In an ideal world, operating a business in any economy would be highly risky due to instability in macroeconomic variables. In order to determine how well monetary policy and fiscal policy combine to determine economic stability, the government must plan ahead. Therefore, this chapter looks at how fiscal and monetary policies interact to support company operations in Nigeria in an effort to determine how much each contributes to a country's economic growth.

A) Background

Nations strive for sustainable economic growth and development, and Adams Smith was the first to formally explain how money affects the total economy. Fiscal policy and monetary policy are his two means of controlling the economy. Financial economists later confirmed this theory. Given our explanation of how monetary policy affects macroeconomic objectives such as economic growth, price stability, balance of payments balance, and various other goals, monetary authorities currently use monetary policy to It is tasked with building the economy.

Since the Central Bank Act of 1958, which provided the Central Bank of Nigeria authority for the creation and execution of monetary policy, monetary policy has been actively supported in Nigeria. After the Great Depression of the 1930s, extreme economic fluctuations pressured policymakers to pay increased attention to the role of monetary and fiscal policy in managing supply and demand. Their first priority was to choose the best course of action to achieve low inflation and output close to full employment. It was first advocated by Friedman in his 1948, emphasizing the need for self-sustaining policies to ensure long-term economic growth and the idea that an increase in the money supply would prevent economic downturns.

Once this monetarist view was accepted, monetary policy became an important tool for controlling inflation and increasing output. Policymakers in the 1960s prioritized fiscal policy and focused on the short term, believing there was a long term. This has sparked a controversial debate among economists about the merits of choosing between monetary and fiscal policy when determining economic policy. Two major schools of economic thought emerged. The Keynesian school highlights



the role which the state may play in the economy via fiscal policy, while the monetarist school accentuates the significance of monetary policy.

II. LITERATURE REVIEW

A) *Monetary Policy*

The Central Bank of Nigeria (2011) adjusts the cost and amount of money supply through monetary policy to support the economy's expansion and stability and to accomplish the three main macroeconomic goals of full-time employment, growth in output, and price stabilization. It is defined as measures taken by financial authorities to promote financial institutions. Therefore, maintaining a balance in a country's money supply is critical to managing monetary policy, as rising surpluses or deficits beyond optimal levels can hinder the achievement of established macroeconomic objectives.

According to Chigbu and Njoku (2013), monetary policy is the process by which the government, through the Central Bank of Nigeria (CBN), controls the quantity, cost and availability of money and interest rates.

Also, The goals of monetary policy, as stated by CBN (2011), are comparable to those of fiscal policy and involve full-time employment, fair distribution of wealth, a proper equilibrium of payments, sustainable growth in the economy, as well as price stability.

By regulating the supply of money and credit to the economy, these objectives are achieved using both direct and indirect financial instruments. As a result, the economy may experience contractionary or expansionary effects from monetary policy. The three primary pillars of monetary policy are interest rates, the money allocation (which is always referred to as the broad money supply, or M2), which in turn comprises the narrow money supply (M1), and exchange rates.

B) *Fiscal Policy*

Fiscal policy in economics describes how the government affects the economy via the purchase of goods and taxation. (Chigbu and Njoku, 2013). In other words, it is about the overall impact of budget outcomes on economic activity. According to the Central Bank of Nigeria (2011), fiscal policy is the government's use of public spending, taxes, debt, and other revenues to influence economic activity in order to achieve a stated macroeconomic goal of full employment.

Furthermore, Ukpong and Akpakpan (1998) describe fiscal policy as the deliberate use of tax and spending powers by governments to influence the level of economic activity and steer it in a desired direction. With this tactic, governments adjust the level, composition, and timing of taxes and spending to achieve political, social, and economic goals within a given period of time.

Taxes, public debt, and spending are, therefore, the main pillars of fiscal policy. Fiscal policy aims to achieve the following goals: Ensure rapid economic growth and development, ensure efficient allocation of resources, increase levels of income and wealth equality, promote job creation, balance regions, promote development, and ensure balance of payments.

C) *Monetary and Fiscal Policies' Coordination*

Although there is a lack of research measuring the level of policy coordination, there is a rich literature on monetary and fiscal policy coordination in general. Englama, Tarawaile, and Ahorto (2013) conducted the only study on Nigeria that investigated the level of coordination of monetary and fiscal policies within the West African Monetary Zone (WAMZ), which includes Nigeria. More specifically, Englama, Tarawaile, and Ahorto (2013) use a VAR model and a set theory approach (STA) to investigate the extent to which fiscal and monetary policy is coordinated in the West African Monetary Area (WAMZ). The STA results show that a total of about 38.6% of monetary and fiscal policy is coordinated within his WAMZ.

Because it required some time for the factors to reach their long-term equilibrium path, the response to impulses derived from VAR analysis likewise revealed a low sensitivity to shocks. Arby and Hanif (2010) use a set theory approach (STA) to investigate how Pakistan's fiscal and monetary policies were coordinated from 1965 to 2009. Results based on changes in policy indicators that are sensitive to economic shocks show that the degree of coordination between monetary and fiscal policy was only 0.27 (27%) over the sample period. They argued that fiscal and monetary policies were often implemented independently of each other during the study period to solve the economic problems that existed at the time.

There was no difference in the movements of monetary and fiscal policy before and after the establishment of the Monetary and Fiscal Policy Coordination Committee in 1994. They argued that military regimes were the only places where examples of cooperation could be observed, which could explain the macroeconomic stability of these regimes. To achieve macroeconomic objectives, the monetary and fiscal authorities of an economy use a variety of monetary and fiscal policy instruments. Conflicts of interest need to be prevented throughout the implementation phase since both policies use different strategies to accomplish the same goal. For example, the tax authority, the Federal Ministry of Finance can apply tax rates, while the monetary authority, the Central Bank of Nigeria, can use interest rates and currency holdings as its own policy tools. In order to guarantee the smooth operation of the economy, a proper structure for coordination between the two institutions is

required, as the implications of these policy actions by both agencies may be conflicting. The overall success of macroeconomic policy is dependent on the various ways that monetary and fiscal policy tools interact; hence, it is critical to look into how they interact. When discussing how monetary policy affects fiscal policy, interest rates and inflation rates can be considered as two direct transmission mechanisms (Rakic and Radenovic, 2013). Interest rates have a direct impact on fiscal stimulus because they affect spending and debt sustainability.

In 2002, Lane and colleagues proposed the theory that changes in interest rates lead to changes in the primary surplus needed to keep the debt-to-output ratio stable and that the impact grows as debt levels do. Similar to the preceding illustration, elevated and fluctuating inflation rates impact the actual worth of debt that isn't computed in local currency, escalating actual tax obligations and generating inducements to postpone tax payments.

D) Gap in Research

Research on the relationship between finance and fiscal interactions has paid little attention to corporate sustainability in Nigeria, making this an important field of research that ventures to discover the interactions of these macroeconomic variables. However, some studies have found a long-term negative relationship between monetary policy and economic growth, while others have found the opposite relationship.

This study complements existing research on monetary and fiscal policy coordination in Nigeria by investigating monetary and fiscal policy coordination and corporate sustainability in Nigeria's economic growth.

III. METHODOLOGY

A) Sources of Data

The Central Bank of Nigeria Statistical Bulletin (2022) and the World Development Indicators (WDI) database provided the information that was used in this study. The indicator of economic growth and the dependent variable was the real gross domestic product (RGDP). The independent variables in this study were fiscal and monetary policies. Information on mortgage rates and the rate of inflation from 1980 to 2022 were gathered as control variables.

B) Specification

This study adapts the model used by Shirazi and Manap (2004) to explain the inter-relationship between monetary-fiscal policy interactions that will aid business sustainability in Nigeria.

The linear functional form is thus stated as follows:

$$RGDP = (MP, FP, INF, IN) \dots \dots \dots (1)$$

Where,

RGDP = Real Gross Domestic Product

MP = Monetary Policy

FP = Fiscal Policy

INF = Inflation

IN = Interest rate

We can re-specify the Log – Log linear model for the functional form as:

$$RGDP = \alpha_0 + \alpha_1 MP + \alpha_2 FP + \alpha_3 INF + \alpha_4 IN + u_t \dots \dots \dots (2)$$

Equation (2) can also be rewritten to represent the autoregressive distributed lag (ARDL) model.

$$\Delta RGDP_t = \alpha_0 + \sum_{i=1}^p \alpha_1 \Delta RGDP_{t-i} + \sum_{i=0}^q \alpha_2 \Delta MP_{t-i} + \sum_{i=0}^q \alpha_3 \Delta FP_{t-i} + \sum_{i=0}^q \alpha_4 \Delta INF_{t-i} + \sum_{i=0}^q \alpha_5 \Delta IN_{t-i} + \beta_1 MP + \beta_2 FP + \beta_3 INF + \beta_4 IN + \epsilon_{it} \dots \dots \dots (3)$$

C) Data Presentation and Analysis

a. Unit Root test

Before running the ARDL model tests, all variables were tested for stationarity to determine their respective orders of integration. The purpose of unit root analysis is to avoid erroneous results.

As you can see below, the limit test is based on the assumption that the variable is an integral of I(0) or I(1). Since the variables consistently exhibit I(1), applying the ARDL method to economic growth models is justified. The table is shown below.

Table 1: Unit Root Test – Augmented Dickey-Fuller (ADF) and Philip-Perron (PP)

Variable	ADF T-Stat	ADF Critical	TPP T-Stat	PP Critical	Level of Integration
RGDP	-7.6882	-4.212 1% -3.529 5%	-6.6324	-4.1985 1% -3.523 5%	1(1)
MP	-5.2018	-4.198 1% -3.523 5%	-5.2611	-4.1985 1% -3.523 5%	1(1)
FP	-7.3955	-4.2050 1% -3.523 5%	-8.9793	-4.1985 1% -3.523 5%	1(1)
INF	-5.9749	-4.2050 1% -3.523 5%	-5.3911	-4.1985 1% -3.523 5%	1(1)
INTI IN	-8.4462	-4.198 1% -3.523 5%	-8.5563	-4.1985 1% -3.523 5%	1(1)

Source: Author's computation

The results show that after the first differentiation with the Augmented Dickey-Fuller (ADF) test, all variables were integrated at level 1 1(1), and a confirmatory test was performed with the Philip Peron (PP) test. This shows the same integration.

Therefore, they all meet the requirements for ARDL estimation.

Table 2: Correction Matrix

Covariance Analysis: Ordinary					
Date: 08/15/23 Time: 13:45					
Sample: 1 43					
Included observations: 43					
Correlation Matrix					
Variable	RDGP	PD	INT	INFL	ED
RDGP	1.0000				

MP	0.6714	1.0000			
	0.0000	-----			
IN	0.0611	0.2706	1.0000		
	0.6969	0.0792	-----		
INF	0.0019	0.0522	0.1853	1.0000	
	0.9905	0.7398	0.2341	-----	
FP	-0.4350	-0.5889	0.0162	0.2893	1.0000
	0.0036	0.0000	0.9178	0.0599	-----

Source: Output from E-views 10

The correlation matrix between the dependent and independent variables is shown in Table 2. The highest coefficient reported in this result was 0.6714, which was lower than the benchmark of 0.8. Based on this assumption, the pairs of independent variables were not strongly correlated, and multicollinearity was not an issue.

Table 3: Result of Bound Test for co-integration

Test Statistic	Value	Sign.	1(0)	1(1)
F-statistic	16.26310	10%	2.2	3.09
	4	5%	2.56	3.49
		2.5%	2.9	3.94

Source: Author's Computation

Table 3's findings demonstrate that, at the 5% significance level, the computed F-statistic is greater than both the lower and higher crucial values. This indicates that the variables have a long-term link or co-integration. Long-term relationships between variables were estimated based on the presence of co-integration.

Table 4: Results for Conditional Error Correction Regression (Short run)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(RDGP(-1))	-8.7968	0.8090	-10.8731***	0.0000
D(RDGP(-2))	-8.7518	0.8015	-10.9192***	0.0000
D(RDGP(-3))	-54.2467	5.3763	-10.0899***	0.0000
D(MP)	-5342.458	2316.059	-2.3067**	0.0300
D(MP(-1))	-3659.892	2242.773	-1.6319	0.1158
D(IN)	355.1009	550.9374	0.6445	0.5253
D(IN(-1))	465.7640	554.5871	0.8398	0.4093
D(IN(-2))	1913.240	565.7720	3.3816***	0.0025
D(IN(-3))	2826.898	559.4462	5.0530***	0.0000
ECM	-0.8372	0.7709	10.8585***	0.0000

Note: ***, ** and * denote significance at 1%, 5%, and 10% respectively.

Source: Author's computation

Although the variable RDGP has a negative sign and is very important at all lags, but the theoretical predictions are not met by a few of the other variables. The majority of the variables were important.

Monetary policy had a negative relationship with real GDP. This means that a 1% increase in monetary policy will lead to a 5342.5% increase in his RGDP in the short run.

This outcome agrees with Joshua's observations (2021). At both lag 2 and lag 3, interest rates and the dependent variable, RGDP, have a positive relationship. When two variables have a direct or positive link, their values rise or fall together.

Although the error correction term (ECM) of -0.837 has a negative sign, it is less than 1 and is highly significant given the probability value of 0.000. This means that when there is an imbalance in the model, adjustments from short-run to long-run equilibrium occur quickly.

Also, since the ECM was negative and significant, we can determine that the variables are co-integrated and that, in the long run, MP, FP, and IN jointly produce RGDP.

Table 5: ARDL Long run form

Variable	Coefficient	Std. Error	t-Statistic	Prob.
MP	-279.2197	136.3806	2.0474**	0.0517
FP	-0.0001	0.0002	-0.8145	0.4234
INF	9.6533	84.6576	0.1140	0.9102
IN	20.3433	63.0938	0.3224	0.7499
C	11317.92	5087.389	2.2245	0.0358
ECM = RDGP - (279.2197*MP -0.0001*FP + 9.6533*INF + 20.3433*IN +11317.9242)				

Source: Output from E-views 10

Monetary policy had a negative relationship with the RGDP. This implies that a 1% increase in monetary policy will cause a 279.2% decrease in RGDP in the long run. Fiscal policy had a negative association with RGDP; as a result, a 1% increase in fiscal policy would short-term reduce RGDP by 0.0001%, and the probability value of 0.423 indicates that this effect is not of statistical significance.

Table 6: Diagnostic Results

Test	Type of Statistics	Test of Statistics	P-Value
Breusch-Godfrey Serial Correlation LM Test	χ^2	2.2417	0.3260
Ramsey RESET Test	F	45.0315	0.0000
Jarque-Bera normality test	χ^2	4.4105	0.1102
Heteroskedasticity Test	χ^2	14.4814	0.4145

Source: Author's computation

Diagnostic tests show that the model passes all diagnostic tests except the RESET test for linearity or correct specification (Ramsey Regression Specification Error Test). According to the results, the model did not have serial correlation problems. Furthermore, the residuals were normally distributed. Moreover, the results showed that the model was free from heteroscedasticity problems. The probability values determined by these tests exceeded the 5% significance level. However,

because of the statistical importance of the f statistic, the Ramsey Regression Equation Specification Error Test (RESET) test rejected the null hypothesis of linearity or correct specifications.

D) Hypotheses Testing

The purpose of assessing these hypotheses is to ascertain if interest rates, inflation, external debt, and domestic debt significantly influence Nigeria's economic growth.

Ho: $b=0$ There is no significant relationship between domestic debt, external debt, interest rate, inflation and economic growth in Nigeria.

HI: $b \neq 0$ There is a significant relationship between domestic debt, external debt, interest rate, inflation rate and economic growth in Nigeria.

The test is performed, and the decision is made at a significance level of 0.05.

Decision Rule: If the P value is greater than the specified significance level, H0 is closed.

If the P value is less than or equal to the specified significance level, H1 is completed.

Reject H_0 if $p\text{-value} \leq \alpha$ where α = significance level. Based on the results of these hypotheses, it can be estimated that monetary policy has a statistically significant relationship with economic growth in Nigeria.

This is because the p-value of the monetary policy coefficient is 0.0517, which corresponds to the reported significance level of 0.05. Similarly, there is no statistically significant relationship between fiscal policy, inflation rate, interest rate and economic growth in Nigeria.

Why?

The p-values of the fiscal policy coefficient, inflation rate, and interest rate were 0.4234, 0.9102, and 0.7499, respectively.

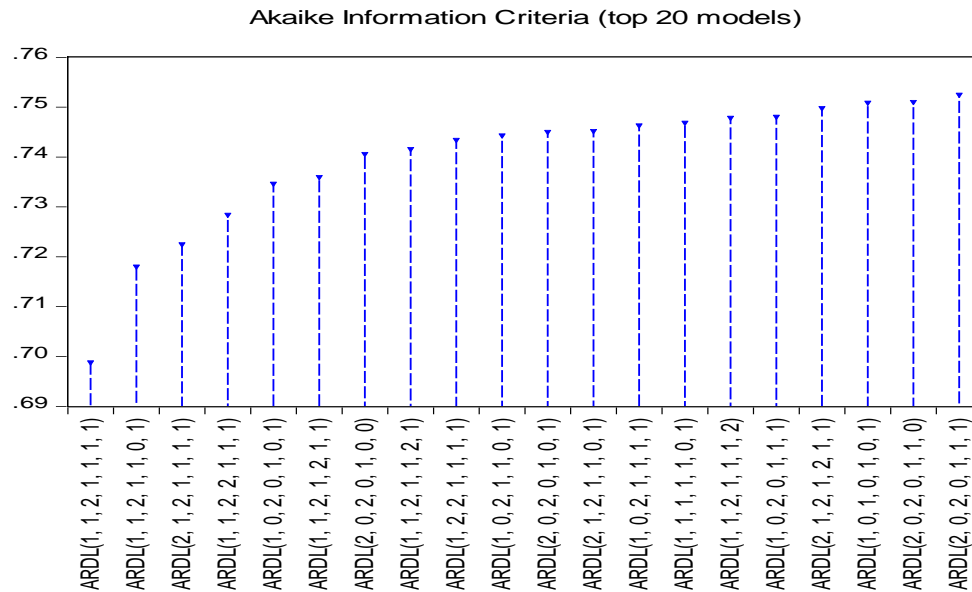


Figure 1: Model Graph

The Akaike Information Criterion (AIC) (Akaike, 1974) is an elegant technique based on within-sample fit for estimating the probability that a model predicts/estimates a future value and is used to compare the fit of different regression models. It is worth noting that a good model is the one with the lowest AIC among all other models.

Looking at different ARDL models, the model with the lowest AIC provides the best fit.

The absolute value of the AIC value is not important.

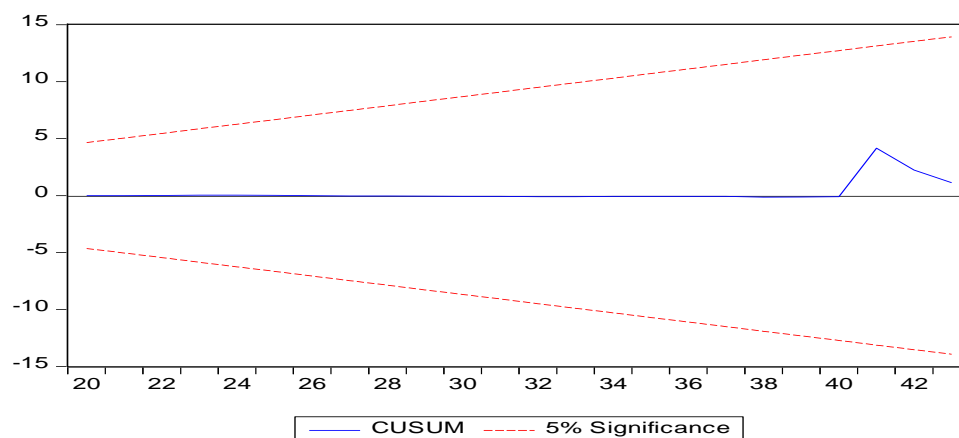


Figure 2: Cusum Test

As seen in the above image, the representation of CUSUM for the model under consideration is within 5% of the critical limit.

This implicitly suggests that the model parameters are not affected by structural instability during the study period. This indicates that the error-correcting model's coefficients remain consistent.

IV. SUMMARY, CONCLUSION AND RECOMMENDATIONS

A) Summary

This work uses real gross domestic product (RGDP) as the dependent variable of monetary policy (MP) and fiscal policy (FP) as independent variables to investigate monetary and fiscal policy coordination and business sustainability in Nigeria.

The control variables are the inflation rate (INF) and the interest rate (IN). Variables were obtained from the CBN Statistics Bulletin (2021). The results of the Dickey-Fuller unit root test statistics show that all variables are stationary with the first difference $I(1)$, and the Philip-Perron (PP) confirmatory test shows the same results.

This alludes to the fact that since the hypothesized non-stationarity is rejected for all variables at the first difference, the ARDL model was adopted for analysis.

B) Conclusion

Except for interest rates, the results of the ARDL model analysis on the coordination between monetary and fiscal policy variables show that monetary policy is highly responsive to changes in fiscal policy, but the reverse is not true.

The long and short-term signs of inflation are negative. This means that higher inflation rates have an adverse effect on the state of the economy. Furthermore, the interest rate coefficient has a positive impact over time in the long run. This means that changes in federal revenue, such as changes in taxes or interest rates, have a positive impact on economic conditions; as a result, businesses function well and contribute to the country's economic growth.

Our model's elasticity status indicates that the elasticity coefficients of interest rate, RGDP growth rate, and inflation rate are less than 1, while the elasticity coefficients of MP and FP are greater than 1. The above suggests that fiscal policy improves economic performance by supporting business expansion more effectively than monetary policy factors.

Therefore, the results suggest that fiscal policy measures have a greater impact on business and economic performance in Nigeria than monetary policy.

C) Recommendations

In line with our study findings, we hereby make the following policy review recommendations.

1. Interaction between monetary and fiscal policy should depend on the interest rate variable rather than the money supply. This is because Economic performance must achieve the desired growth through sustainable income distribution in favor of the poor.
2. Since inflation and external debt both have a negative impact on economic performance, governments should ensure that a debt ceiling that is appropriate and does not adversely affect economic and business sustainability is set.

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