MONETARY AND FISCAL DRIVERS OF FINANCIAL REPRESSION IN NIGERIA

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ABSTRACT

The study examines the feedback of financial repression to innovations from monetary policy and fiscal policy variables. It tests the Mckinnon-Shaw financial repression hypothesis, and identifies the major drivers of financial repression in Nigeria. The study develops and applies a Vector Error Correction Model, using quarterly data from 2007 to 2019. We find that lending rates and fiscal deficits are the main drivers of financial repression in Nigeria. Lending rates impact investment positively contrary to the theoretical postulate of Mckinnon and Shaw, with a temporary impact in the short run. Conversely, fiscal deficits impact investment negatively, implying that rising public debt is a dominant driver of financial repression. Furthermore, deposit rates have the least impact on private investment in our model, suggesting that low savings (deposit) rates discourage savings in the long run. The study concludes that financial repression persists in Nigeria due to three main factors, namely: (i) rising fiscal deficits; (ii) negative lending rates, and (iii) deposit rates are not attractive enough to boost savings. The study, therefore, recommends, amongst others, that Deposit Money Banks should adjust their interest rates downwards to encourage domestic investment. Also, the government needs to broaden its revenue base to help rein-in government deficits, a major driver of financial repression in Nigeria.

Keywords: *Financial Repression, Monetary Policy, Lending Rates, Fiscal Deficits, Deposit Rates*

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1.0 Introduction

Financial repression arises when a set of government regulations, laws, and other non-market restrictions prevent financial intermediaries in an economy from functioning at their full capacities. These measures direct available financial market funds to meet the sovereign's public debt requirements on favourable terms often below the market rates. Financial repression could be triggered by either monetary or fiscal policy or both in the form of interest rate ceilings, liquidity requirements, bank reserve requirements, capital controls, restrictions on directions of credit allocation, and government ownership or domination of banks (Todaro & Smith, 2011). Thus, financial repression compels banks to allocate a greater proportion of their limited funds to financing government deficits to the neglect of productive investments, thereby reducing the total amount of investment in an economy. Accordingly, financial repression has crowding-out costs as it reduces aggregate output through its dampening effects on private investment.

Financial repression often occurs when governments force banks to hold a certain proportion of their government bonds as assets. This process helps governments to raise revenues to finance their expenditures using debt instruments that can be held by banks, households, and in an open economy, by foreigners. However, governments often engage in financial repression only when the crowding-out costs are exceeded by its tax-smoothing gains. These gains have been found to be largest during periods of unusually high government expenditures, or when funds from foreign investors dry up (Chari, 2016). The core policy measures of financial repression can be grouped into two main categories, namely domestic financial regulation and capital controls (Hileman, 2016). These restrictions constitute constraints on investment, as they prevent the efficient allocation of credit, thereby inhibiting economic growth. Rising debt levels (see Hoffman & Zemanek, 2012) and interest rate hike (see Roubini and Sala-i-Martin, 1992) have been identified as the main causes of financial repression. Rising government debts in less developed countries (LDCs) have been worrisome in the past decades; first, in terms of sustainability and second, in terms of crowding out effect on the private sector. This is because, as governments channel funds to themselves through domestic borrowing, they repress the financial market, affecting credit creation by deposit money banks (DMBs). Thus, private investments are constrained to the limited resources of DMBs and informal financial institutions. This development results in under-pricing of capital by banks and leads to low returns on deposits as banks may not be able to

meet equilibrium interest rates. Potential savers, therefore, could transfer their money holdings in DMBs to tangible assets.

Thus, governments' penchant for domestic debts to finance their deficits can distort the operations of financial markets and results in financial repression.

On the other hand, interest rates adjustments through monetary policy aimed at price stabilisation (inflation control) could also result in financial repression. For instance, upward interest rate adjustments by the monetary authority intended to stabilise prices (contractionary stance), may inadvertently repress finance which often has adverse implications for investment. A high interest rate discourages investors irrespective of credit availability, thereby hampering domestic investment. In such instances, financial intermediaries may not function at their full capacity, failing to channel savings to investment efficiently, thereby slowing economic activity.

In Nigeria, the subject of financial repression is significant for two principal reasons. First, the fiscal authority often adopts an expansionary fiscal policy, usually involving huge deficits, financed, largely, by the financial sector (which diverts funds away from the investing public). Second, monetary authority, on the other hand, prioritises price stability, involving inflation control and requiring a tight monetary policy stance, which discourages public borrowing due to high interest rates. This, therefore, presents a dilemma as pursuing independent objectives by the monetary and fiscal authorities may lead to a double burden on the financial sector, with implications for financial repression. This development has become a persistent feature of macroeconomic management in Nigeria, as the country grapples with dwindling foreign receipts following lower crude oil prices, resulting from excessive supply (OPEC+ disagreement on cuts) and other geopolitical tensions in many regions.

In this study, therefore, we examine the impact of monetary and fiscal policies on financial repression in Nigeria. Even though the literature identifies fiscal policy and monetary policy as causative factors, changes in interest rate, exchange rate and inflation are significant determinants of private investment in Nigeria. Second, in the literature, there is overwhelming emphasis on financial repression arising from the government's drive to finance deficits, when compared with that arising from the monetary policy e.g. Obi and Nurudeen (2009), Islam (2008) and Santarossa (2001). Third, the literature on the subject matter is scanty in

Nigeria, especially those relating to financial repression caused by monetary policy. The objectives of this study are therefore: first, to evaluate the impact of monetary and fiscal policies on financial repression in Nigeria; and second, to determine the main policy drivers of financial repression in Nigeria.

The rest of the paper is structured as follows. Section two presents the theoretical framework and empirical review of related literature. Section three presents the method of the study, technique of analysis and data sources. Section four discusses the results of the study alongside some stylised facts. Section five concludes the paper and attempts some policy recommendations.

2.0 Review of Related Literature

2.1 Theoretical Argument: Financial Repression Theory

Financial repression remains a re-occurring subject in the literature. Mckinnon (1973) and Shaw (1973) were the first to provide an insight into the concept of 'financial repression' sometimes referred to as complementarity hypothesis. Their respective theories attribute the poor performance of the financial sector to repressive economic policies. According to Mckinnon (1973), fragmentation is the main reason for underdevelopment in third world countries due to the presence of asymmetric information in prices of financial products. These are policies by the government which favour a few classes of borrowers at the expense of others and inhibit the functioning of markets. This consequently constrains the ability of financial institutions to engage in financial intermediation. To Mckinnon, the major problem of LDCs is matching savers with those with investment opportunities, which is the intermediation function performed by financial market institutions. However, the banking system which constitutes a major player in the financial market has failed to sufficiently perform this function in many jurisdictions.

This development is due to “financial repression” – i.e. administratively imposed usury ceilings on loan interest rates and strict collateral requirements, which together compel banks to prioritise investment in safe, low-yielding assets (Rehman & Gill, 2005). An additional aspect of financial repression is the imposition of large reserve requirements, generally enacted for fiscal motives. For both reasons, banks pay low interest rate to savers, causing low credit mobilisation and other adverse macroeconomic outcomes.

First, in LDCs money is not only held for transaction purposes but also for speculation. However, the low interest rates on deposits, paired with inflation usually repress private saving. Given the relationship between savings and investment, a reduction in money balances translates into reduced capital formation. The weak financial intermediation, therefore, forces individuals to accumulate money balances before investment can be undertaken. On the other hand, if the real rate of return is high, savings accumulation will be greater and the inducement to invest will also be higher. Money is, therefore, not a competing asset; rather it is the channel through which savings and investment takes place in developing countries.

McKinnon (1973) and Shaw (1973) analysed the benefits of reducing the impact of financial repression on the domestic financial system in developing countries. They called for alleviation of financial restrictions by allowing market forces to determine real interest rates, reckoning that artificial ceilings on interest rates reduce savings, capital accumulation, and discourage the efficient allocation of resources. If the interest rate is not market-determined, both the quality and quantity of savings and investment would be repressed, according to them.

The early hypotheses of McKinnon and Shaw assumed that liberalization, which is often associated with higher real interest rates – as controls on these rates are lifted – would stimulate saving. The underlying assumption is, of course, that saving is responsive to interest rates. The higher savings would finance higher levels of investment, thereby increasing growth. Therefore, according to this view, higher saving rates, higher levels of investment and growth often accompany financial liberalization. Thus, this theory explains the interrelationships between savings, interest rates and investment and how they impinge on economic activities. By implication, it reinforces the objective of this study as those interrelationships are significantly affected by government regulation.

2.2 Empirical Reviews

In this section, we present related literature relating to monetary policy and financial repression, with a special emphasis on Nigerian applications with time series data. The reviews provide further insights to the empirical evidence of financial repression, especially with respect to data, variables and analytical methods. Some of the reviews focus on the impact of inflation on financial development, others on the impact of fiscal deficits on interest rates and financial

development in different contexts.

Agbaeze and Onwuka (2014) analysed the impact of financial liberalisation on investments in Nigeria. They used the Johansen cointegration test and correlation matrix to analyse the data. The model variables included levels of investment, liquid liabilities (M2) as a ratio of GDP, Credit to the Private Sector/GDP, Credit to the Public Sector/GDP, Stock Market Capitalization/ GDP, and macroeconomic measures of uncertainty, namely, inflation, interest and exchange rates. The result showed that investment, especially private sector investment, has not improved following financial liberalization in the country during the late 1980s. The sequencing of the liberalization process and hostile macroeconomic environment have combined to minimize the expected benefits of financial liberalization. According to the study, apart from the current tinkering and re-tooling of the liberalization process in the country, government should promote monetary stability, ensure sound macroeconomic management and provide infrastructure to enable private investment to thrive.

Feridun and Nejad (2013) conducted an analysis of financial development under a financial repression regime in Iran. The study implemented an ARDL Bounds test and ECM technique, with data from 1965 to 2006 on a number of macroeconomic variables, namely financial development, GDP, inflation rate, financial restraint index, trade as a percentage of GDP and savings as a percentage of GDP. They found that repressive policies impacted negatively on financial development in Iran. In conclusion, they noted that financial market policies limit the level of savings and investments which, in turn, impact negatively on financial development.

Pourshahab and Elyasi (2013) examined the empirical relationship between financial repression and financial depth based on McKinnon-Shaw hypothesis in two sets of countries – 43 lower middle-income countries and 33 upper middle-income countries. Real interest rate and banking reserve requirement ratio data for the period 1990-2008 were used to measure financial repression, using the Dynamic Panel Data (DPD) technique. The results show that reserve requirements and inflation have significant negative effects on financial depth in the two sets of countries. Also, the nominal interest rate and economic development positively affect the level of financial depth. Thus, financial repression is an obstacle to financial depth. The study, therefore, recommended an increase in nominal interest rate, a reduction in reserve requirements and

inflation are necessary for financial depth in the two sets of countries.

Zarra-Nezhad, Parsaeian, and Anvari (2012) estimated financial repression in selected oil exporting countries. Panel data method was used to analyse data for the period 1990-2009 for Iran, Saudi Arabia, Venezuela, Nigeria, Mexico and Indonesia. In measuring financial repression, the study adopted Battiliossi's (2004) financial repression index, using a number of variables, namely reserve requirements, government debt, real interest rate and the ratio of liquidity volume to Gross National Product. The main finding of the study is that financial repression index for the selected countries was about 50 in the period 1990-1998, with a peak value of 69 in the year 2000, and the index generally higher than the median on average.

Adesoye, Maku and Atanda (2011) tested the Mackinnon-Shaw Hypothesis by examining the effect of monetary policy on financial repression in Nigeria. The study used real monetary balance as an indicator of financial repression. Real output, real investment, nominal interest rate, and consumer price index were regressed against monetary policy. The Error Correction Method (ECM) was used to estimate the long- run relationship for the period 1980-2008. The study suggests that in the long-run, real output and nominal interest rate are significant factors determining monetary balances independently, thus indicating the degree of financial repression in the country during the time horizon. Also, the study observes that price stability is the only significant factor that determines monetary balances in the short-run, thereby, strengthening the argument of McKinnon and Shaw that financial repression is a consequence of inflation. The study recommended that the public sector should formulate appropriate financial policies in the management of the country's real balances and prices to guide against financial repression and other real shocks in the economy.

Ezeabasili and Mojekwu (2011) applied cointegration and structural techniques in their analysis of fiscal deficits and interest rate in Nigeria. The model variables were interest rate, government expenditure, fiscal deficit, money supply and inflation rate. Using secondary data from 1970 to 2006, they found that fiscal deficit exerted a positive but insignificant effect on interest rate. They recommended that monetary financing of government deficits should be discouraged; rather bonds should be used as an alternative since it has less inflationary effects.

Namazi and Salehi (2010) analysed the role of inflation in financial repression in Iran. Regression and correlation methods were used to estimate financial repression, with secondary data for the period 1990-2009. The model variables were Inflation rate, amounts of absorbed deposits, deposits in commercial and specialized banks and total facilities granted by banks were. They found, among others, that a rise in inflation resulted in a decrease in the real value of deposits. They concluded that banking system oligopoly in the presence of financial repression caused inefficiencies in the financial market.

Obi and Nurudeen (2009) estimated the impact of fiscal deficits on interest rate in Nigeria using the Vector Auto-Regressive (VAR) approach. Their analysis used interest rate, ratio of overall fiscal deficits to GDP, ratio of total government debt to GDP, international interest rate proxied by the US interest rate and inflation rate for a period of 26 years, 1981 to 2006. They found that fiscal deficits impacted positively on interest rates in Nigeria and suggested that government should curtail its expansionary spending as much of it is unproductive.

Arreaza-Coll, Huskey and Zumeta (2009) empirically examined the effect of financial repression on interest rate spreads in Venezuela between January 1997 and March 2008. The variables used were: financial repression index, capital assets ratio, non-performing loans ratio, operating costs to asset ratio, liquidity ratio, credit concentration, inflation, M2/GDP, interest rate volatility and real exchange rate variations. Using panel regression, they found there is a statistically significant positive correlation between the overall index of financial repression and interest rate spreads. They suggested capping loan rates and setting minimum deposit rates were not the appropriate policy to address high and volatile interest rate spreads as the policies may end up creating more distortions, while the more deleterious factors such as high operating costs, systemic risks and regulatory burden remain unaddressed.

Gupta (2005) in a seminal paper developed a growth model for a financially repressed small but open economy. The study analysed the effects of financial liberalization on the steady-state capital stock, trade balance, foreign reserves and welfare. The author surmised that an increase in interest rate would result in a reduction of the steady-state stock of capital which would, in turn, result in an increase in the foreign exchange reserves and vice versa. In addition, financial liberalization has the capacity to improve welfare. A major finding of the study is that if foreign reserves are not in the critical threshold, financial liberalization policies should focus on the reserve requirements rather than interest rates.

Santarossa (2001) analysed arrears as a sign of financial repression in Transition Economies, focusing particularly on Romania. The study identified signs of financial repression in a transition economy, and evaluated the extent of perverse financial innovations resulting from soft budget constraints and their interference with monetary conditions at the aggregate macroeconomic level. The analysis considered two settings: (i) in an ad-hoc econometric investigation of the determinants of M1 and M2 velocities and (ii) in a simple money demand-money supply model, estimated with and without endogenous inter-enterprise arrears as determinant of money demand. The study concluded that, even though, it is theoretically possible for overdue trade debt and arrears to interfere with monetary policy effectiveness and the trajectory of monetary aggregates, this was not the case with inter-enterprise arrears in Romania between 1991 and 1995. The study recommended that restricting the growth of liquidity and credit in the economy through monetary measures is not enough to mitigate budget constraints.

Following this review, our study identified some gaps in the existing empirical literature. We found attempts have been made to analyse the concept of financial repression, with only a few of the studies focusing on the impulses of monetary policy (see Adesoye, Maku & Atanda, 2011). Others (Agbaeze & Onwuka, 2014; and Feridun & Nejad, 2013) use financial development/liberalisation as the hub of their analyses while a handful (e.g. Ezeabasili & Mojekwu, 2011 and Obi & Nurudeen, 2009) prioritise fiscal deficits in their analyses. In addition to this, most of the extant studies are no longer contemporary due to the changing macroeconomic conditions and evolving country-specific idiosyncratic factors. A good number of studies were based on annual time series, which are not appropriate in monetary policy analysis given its short-term relevance. Our study used high frequency data (quarterly series) in its analysis, and applied methodologies that effectively capture shocks emanating from monetary policy.

Our study also added fiscal deficits as a control variable in the model to estimate their empirical relationship with financial repression, and to appropriately determine whether fiscal or monetary policy exerts a greater impact on financial repression in Nigeria. The feedback from financial repression analysis should broaden our understanding of the scope of interactions between monetary and fiscal policies and their effects on financial repression (proxied by private investment) in Nigeria.

3.0 Method of Study

3.1 Technique of Analysis and Model Specification

In this study, we implemented a Vector Error Correction Model (VECM) to estimate the impact of monetary and fiscal variables on financial repression in Nigeria. Descriptive, statistical and econometric analyses were used in conformity with the stated objectives following results of the preliminary tests. The analytical tools were applied in line with economic theory and a *priori* expectation. The original monetary policy and financial repression nexus was developed by Mckinnon and Shaw. Our study adapted their original model to suit the Nigerian situation as follows: $PI = f(DIR, LIR, INF, FD, DMB))$ (1)

Where: PI is Private Investment (Gross Fixed Capital Formation), DIR is Deposit Interest Rate (Savings/Time Deposits), LIR is Lending Interest Rate, INF is Inflation Rate proxied by Consumer Price Index, FD is Fiscal Deficits (proxied by Domestic Debt), and DMB is Demand for Money Balance (savings and time deposits). **Note:** *PI is used as proxy for financial repression*

Mckinnon and Shaw emphasized the role of the financial sector in increasing the volume of savings by creating appropriate incentives. They believed that promoting savings helps to eliminate the problem of financial repression. Thus, they used savings (demand for money balance) and investment (real private investment) to capture financial repression in a complementarity model. They argued that higher savings and investment rates can only be achieved by abolishing interest rate ceilings and seigniorage. As a result, real interest rates should rise to market clearing values, thus increasing savings. This study modified the Mckinnon and Shaw model by including savings in the real private investment equation, thus eliminating the need for a complementarity model.

Private Investment proxied by gross fixed capital formation (GFCF) was used to determine the response of domestic investment to deposit rates, lending rates and inflation, which Mckinnon and Shaw believed are the underlying drivers of financial repression (also see Agbaeze and Onwuka, 2014). This implies that insufficient savings exacerbated by inappropriate incentives could constrain credit expansion, consequently slowing down private investment. Private investment here includes that made by domestic and foreign investors, as the prevailing interest rate determines the inflow of foreign direct investment into the economy. In other words, interest rate and inflation determine the level

of investment in an economy, whether domestic or external, and signals the presence or otherwise of financial repression in an economy. The study further modified the Mckinnon-Shaw model by introducing fiscal deficits to account for crowding out effect of government borrowing, which affects credit expansion and inhibits investment. Even though, monetary factors have been suggested as the main driver of financial repression, government debt can significantly influence interest rates and further worsening financial repression. Rising fiscal deficit leads to insufficient credit facilities for prospective private investors. An excess demand for credit with a corresponding shortage of supply mounts upward pressure on the interest rates. Government deficits, therefore, affect interest rate, which in turn affects investment accordingly.

Therefore, we introduced both monetary and fiscal factors in the model to ensure a robust identification of the major driver of financial repression in Nigeria. In addition to estimating their theoretical relevance in the model, the study also estimates the contributions of the factors to shocks to financial repression in Nigeria.

The generic form of the VECM model is given as:

$$\Delta Y_t = a\beta Y_{t-1} + \beta_1 \Delta Y_{t-1} + \beta 2 \Delta Y_{t-2} + \ldots + \beta_p \Delta Y_{t-p} + ₦_t \qquad (2)$$

Where:

a	=	speed of adjustment
β	=	long run parameters
Y_t	=	(N X 1) vector of endogenous variables
t	=	1, 2, . . . , T
P	=	VAR lag length

The VECM for the study is stated as follows:

$$\Delta INV_t = \alpha^{INV} + \sum_{i=1}^{K} \beta_i^{INV} \Delta INV_{t-i} + \sum_{i=1}^{K} \gamma_i^{INV} \Delta DIR_{t-i} + \sum_{i=1}^{K} \delta_i^{INV} \Delta LIR_{t-i} + \sum_{i=1}^{K} \theta_i^{INV} \Delta INF_{t-i} + \sum_{i=1}^{K} \vartheta_i^{INV} \Delta FD_{t-i} + \sum_{i=1}^{K} \pi_i^{INV} \Delta DMB_{t-i} + \tau^{INV} ECM_{t-1}^{INV} + \varepsilon_t^{INV} \qquad (3)$$

3.2 Data Sources and Measurement

The data for the analysis was obtained from the Central Bank of Nigeria (Statistical Bulletin). We used quarterly data for a 13-year period, spanning 2007 to 2019. Gross Fixed Capital Formation, Domestic Debt, and Demand for Money Balances were obtained in billions of naira while deposit and lending interest rates and consumer price index are expressed in percentage. To harmonise the

units of measurement, following unit root tests, we transformed Gross Fixed Capital Formation, Domestic Debt, and Demand for Money Balances into semi-log series since they are not expressed in rates.

4.0 Stylised Facts

The monetary and fiscal drivers of financial repression are presented in Figures 1 and 2. Figure 1 shows the trend of inflation, deposit rates and maximum lending rates. These rates determine demand for money balance and private investment which underscores the financial repression model by Mckinnon and Shaw.

The figure shows a stable deposit rate, a fluctuating headline inflation, and a gradually rising lending rate. Savings (deposit) rate is quite low averaging 3.03 per cent during the study period. In contrast, the mean lending rate is 25.12 per cent during the same period. Deposit rate peaked at 4.3 per cent in 2007Q1, recording its lowest level in 2011Q2 at 1.4 per cent. On the other hand, the lowest lending rate was
18.92 per cent in 2007Q1 and its highest was 31.55 per cent in 2018Q1. It should, however, be noted that deposit and lending rates are determined by the central bank policy rate, which is the nominal anchor for all market interest rates. Thus, downward and upward adjustments in the policy rate influence the deposit and lending rates. A downward adjustment is inimical to savings but stimulates investment. On the other hand, an upward adjustment attracts savings and discourages investment.

Figure 1: Inflation, Deposit and Lending Rates (2007–2019)

These developments, therefore, cause financial repression because inadequate savings affects the creation of loanable funds. On the flipside, adequate savings in the presence of high lending rates may not encourage credit uptake, which

adversely affects growth. Generally, lending rates are downward sticky. While deposit rates respond proportionately to changes in the policy rate, lending rates only respond to upward movements in policy rate in Nigeria. The spread between deposit rates and lending rates has remained large over the years (from Figure 1). This development presents a double whammy impact on economic activity as the former is not attractive for savings while the latter is unfavourable for investment. More so, the curve for deposit rates has been flat over the years, while lending rate has been increasing significantly, which is inimical to private investment in Nigeria.

This situation is further worsened by the prevailing high rate of inflation, making real deposit interest rate negative and reducing individuals' propensity to save. For the same reason, real lending interest rates have become relatively low, justifying lenders' decision to keep the rates high to maintain profit margins. Inflation rate has witnessed see-saw changes with different peaks and troughs averaging 11.38 per cent between 2007 and 2019. In recent times, inflation trajectory has remained within the double-digit range since the first quarter of 2016. As at the end of 2019, the rate of inflation was 11.98 per cent. A high and volatile rate of inflation affects decisions of economic agents; it influences savers' and investors' decisions to either save or borrow at the market rates.

We also relate the levels of savings, credit to the private sector, domestic debt and domestic investment in the economy (Figure 2).

Figure 2: Savings, Domestic Debt, Credit to Private Sector and Private Investment (2007-2019)

Fiscal deficits, savings, credit and private investment have trended upwards with manifold increases between 2007 and 2019. Government debt rose from N2.2 trillion to N14.3 trillion; savings increased from N2.7 trillion to N16.8 trillion; credit to private sector expanded from N4.6 trillion to N17.2 trillion while private investment improved by N9.0 trillion from N1.9 trillion to N34.8 trillion in the same period. A major observation is that fiscal deficits and savings appear to be larger than private investment. Savings appear to be huge, however, it is less than 15 per cent of GDP which is relatively low given the growth in population, indicating a low level of savings. This development, coupled with rising government borrowing, continues to stoke the degree of financial repression.

Domestic debt, for instance, accounts for over 80 per cent of domestic savings, thereby supporting the presence of crowding out effect. The surge in fiscal deficits continues to fuel the rise in lending rates. The increase in fiscal deficits causes scarcity of funds for the private sector (a crowding out effect), resulting in a rise in interest rates, thereby discouraging private sector borrowing and investment. As mentioned earlier, if the surge in fiscal deficits continues in the foreseeable future, alongside rising lending rates, then private investment is bound to decline, further worsening financial repression.

The trend analysis above provides insight into the relationship between monetary policy and financial repression, and the results of the VECM analysis further support the above finding.

5.0 Results and Discussion

5.1 Preliminary Analysis

The unit root tests were conducted to determine the stationarity of the data series in order to avoid spurious estimates, and to provide direction on the appropriate modelling technique. The result is contained in Table 1:

Table 1: Unit Root Tests

Variable	Levels		First Difference		5% Critical	Order of
	ADF Statistic	Prob.	ADF Statistic	Prob.	Value	Integration
PI	2.74	1.0000	-3.33	0.0189	-2.92	I(1)
DIR	-1.39	0.5785	-6.09	0.0000	-2.92	I(1)
LIR	-1.32	0.6130	-4.68	0.0004	-2.92	I(1)
INF	-2.62	0.0953	-5.62	0.0000	-2.92	I(1)
FD	1.32	0.9985	-6.33	0.0000	-2.92	I(1)
DMB	0.25	0.9734	-6.45	0.0000	-2.92	I(1)

Source: Eviews 10 Output, 2020.

Table 1 indicates that the variables are stationary at first difference. The test for cointegration was therefore conducted to determine if there is a linear combination amongst the variables of the model. The results are shown in Table 2:

Table 2: Johansen Cointegration Test

Null Hypothesis	Trace Statistic	5% Critical Value	Prob.**	Max-Eigen Statistic	5% Critical Value	Prob.**
r = 0*	271.38	95.75	0.0000	106.95	40.08	0.0000
r = 1*	164.43	69.82	0.0000	70.49	33.88	0.0000
r = 2*	93.95	47.86	0.0000	54.09	27.58	0.0000
r = 3*	39.86	29.80	0.0025	23.99	21.13	0.0192
r = 4*	15.87	15.49	0.0440	14.88	14.26	0.0400
r = 5	0.99	3.84	0.3198	0.99	3.84	0.3198

Both Trace test and Max-Eigen test indicates 5 cointegrating eqn(s) each at the 0.05 level
** denotes rejection of the hypothesis at the 0.05 level*

Source: Eviews 10 Output, 2020.

The Trace test and Max-Eigen statistics show a long run equilibrium relationship among the variables at 5 per cent significance level, implying that the non-stationary time series are co-integrated. Given the presence of co-integration, the Vector Error Correction Model (VECM) is appropriate to evaluate the degree and impact of the relationships, and generate the respective impulse response functions and their variance decompositions.

We also tested the error correction term (ECM), and found that it is negative and statistically significant. This is shown in Table 3:

Table 3: Error Correction Parameter

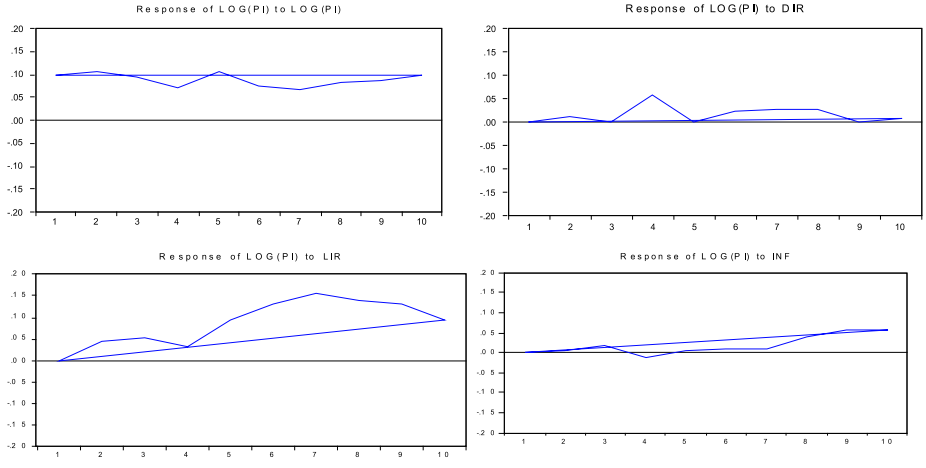
Error Correction	Cointeq1	Standard Error	T Statistics
D(LOG(PI))	**-0.40**	**0.18**	**-2.23**

Source: Eviews 10 Output, 2020

The magnitude of the error term shows a moderate speed of adjustment if there is any deviation from the long run equilibrium in the endogenous system where about 40 per cent of the disequilibrium may be removed in each period. Given that the ECM term satisfies the two a priori conditions, we proceed to analyse the results of the impulse response and variance decomposition.

5.2 Impact of Monetary Policy on Financial Repression in Nigeria

The preliminary analysis above suggests it is appropriate to apply the VECM. Following the VECM analysis, we are able to show the response of financial repression (proxied by private investment) to unanticipated shocks to monetary and fiscal policy variables, namely fiscal deficits, savings, lending rates, deposit rates, and inflation. Thus, we unveil the impact of the monetary and fiscal policy variables on financial repression in Nigeria. The feedback of financial repression to monetary policy was also estimated using the impulse response functions while the proportions of shocks accounted for by each variable in the endogenous system were analysed using the variance decompositions. The impulse response functions are shown in Figure 3:



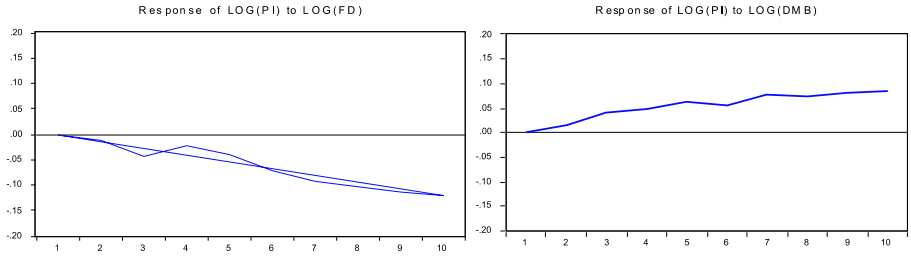


Figure 3: Response of Financial Repression to Monetary Impulses
Source: Eviews 10 Output, 2020.

Figure 3 shows the response of private investment (a proxy for financial repression) to its own shock and to the innovations from fiscal deficits, savings, lending rates, deposit rates, and inflation. In summary, private investment responds positively to its own shock, with the response persisting over a long term. Similarly, it responds positively to the impulses from deposit rates, lending rates, inflation, and savings. However, the innovations from fiscal deficits affect private investment negatively.

Deposit rates, savings and fiscal deficits signs are in conformity with economic theory; however lending rates and inflation rate signs are contrary to a priori expectations. This implies that lending rates and inflation do not inhibit financial repression. In other words, lending rates do not affect investor decisions and inflation rate is not inimical to private investment. Thus, deposit rates and savings have the potential to spur private investment in the long-run, and are not inimical to financial repression in the short to medium term. Conversely, fiscal deficits worsen financial repression in Nigeria.

Furthermore, the impact of lending rates on investment appears to be transitory and may become negative in the foreseeable future implying that the current rate of interest charged by DMBs is not sustainable, neither is it conducive for borrowers. On the flip side, the innovations from savings, fiscal deficits and inflation are permanent in the long run. While the impact of savings and inflation is a conduit for expansion of future investment; fiscal deficits have significant negative consequences for private investment in the Nigerian economy.

The development indicates that fiscal deficits lead to financial repression; however, lending rates and inflation do not trigger financial repression. Thus, fiscal policy is detrimental to private investment while monetary policy is not.

However, caution needs to be exercised as the behaviour of interest rate is momentary and may exert similar outcomes as fiscal deficits in the longer term.
To examine the dominant factors that cause financial repression, the Variance Decomposition analysis of private investment is presented in Table 4:

Table 4: Variance Decomposition of Private Investment (PI)

Period	S.E.	PI	DIR	LIR	INF	FD	DM
1	0.0988	100.00	0.00	0.00	0.00	0.00	0.00
2	0.1524	88.78	0.49	8.90	0.12	0.48	1.24
3	0.1957	76.19	0.30	12.41	0.84	5.52	4.74
4	0.2256	67.65	6.70	11.18	1.00	5.27	8.20
5	0.2751	59.80	4.50	18.82	0.70	5.75	10.43
6	0.3272	47.23	3.67	29.49	0.56	8.84	10.20
7	0.3876	36.65	3.09	36.82	0.45	11.92	11.07
8	0.4417	31.75	2.80	38.59	1.13	14.44	11.29
9	0.4927	28.71	2.25	38.09	2.14	17.04	11.77
10	0.5355	27.78	1.92	35.33	3.00	19.45	12.51

Source: Eviews 10 Output, 2020.

Table 4 indicates that in the first period, 100 per cent of the shocks to private investment originates from itself. This declines gradually over the successive quarters to 59.80 per cent in the 5th quarter and 27.78 per cent in the 10th quarter. The shocks from deposit rates peaked at 6.70 per cent in the 4th horizon decreasing to 1.92 per cent in the 10th horizon. The shocks from lending rates to private investment are peculiar in each quarter – it rose to 12.41 per cent in period 3, fell to 11.18 per cent in period 4, increased to 38.59 in the 8th period, before decreasing to 35.33 per cent in period 10. This development suggests that lending rates shock exacts the most significant impact on private investment (a measure of financial repression), followed by fiscal deficits.

The shocks from inflation appear weak and changed moderately in the forecast horizon – rising from 0.84 per cent in the 3rd forecast horizon to 3.0 per cent in the 10thhorizon. The innovations from fiscal deficits rose steadily across the forecast horizon from 0.00 per cent in period 1 to 19.45 per cent in period 10; except between periods 3 and 4, where there was a slight decline from 5.52 per cent to 5.27 per cent. The impulses from demand for money balance across the forecast period only witnessed a decline between period 5 and 6 – from 10.43 per cent to 10.20 percent. Generally, there was a significant rise between the 1st and 10th horizons from 0.00 per cent to 12.51 per cent.

In summary, private investment accounts for 27.78 per cent of the shocks affecting itself in the 10th forecast period. The other variables in the endogenous system constitute the remaining 72.22 per cent. Out of this proportion, lending rates and fiscal deficits are the major determinants of private investment representing 35.33 per cent and 19.45 per cent respectively. Savings also accounts for a significant proportion of the impulses affecting private investment. Deposit rates and inflation together constitute 4.92 per cent of the shocks from the system – the least impact in the system. The minimal impact of deposit rates has implications for savings which in turn affects investment in Nigeria.

6.0 Conclusion and Policy Implications

The study examines the feedback of financial repression to innovations from monetary policy instruments and fiscal deficits. The analysis reveals that lending rates and fiscal deficit are the main drivers of financial repression in Nigeria. However, their respective impacts on private investment are in different magnitudes. As shown in the discussion, lending rates impacts investment positively – this is contrary to the theoretical postulation of Mckinnon (1973) and Shaw (1973). Contrarily, fiscal deficit impacts investment negatively implying that rising debt is a driver of financial repression as revealed by the empirical model. It is plausible to assert that fiscal policy through government deficits causes financial repression in Nigeria. On the other hand, monetary policy through interest rates and inflation does not lead to financial repression. Even though this buoys confidence on the conduct of monetary policy, the result shows that lending rate will converge towards equilibrium into negative horizons in future periods. Thus, there is a negative impact of lending rate on private investment if lending rates are not steered in the right direction.

Savings can stimulate investment. For that to happen, deposit rates need to be competitive to attract savings. The results of the empirical model show that deposit rates exert the least impact on investment, because they are currently too low to stimulate mobilisation of savings. As lending rates are impacting investment negatively while deposit rates are not attractive enough to stimulate savings mobilisation, then financial repression is bound to persist. On the basis of these findings, the study suggests as follows:

i. Deposit Money Banks should reduce their interest rates to reflect market conditions. The high lending rates, if not adjusted, will continue to be an impediment to domestic investment in Nigeria, thereby worsening financial repression.

ii. The CBN should adjust the band around savings rate (a quotient of the policy rate) upwards. This is because the current deposit rates are not attractive enough, resulting in savers' preference for money holdings rather than saving. Poor savings mobilisation will further intensify the degree of financial repression in Nigeria.

iii. Finally, the diversification of the Nigerian economy by increasing revenue sources should be implemented. When achieved, it would help to rein-in growth of government deficit, a major cause of financial repression in Nigeria.

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