



An Empirical Analysis of the Interaction between Monetary Policy and Commercial Bank Lending in Nigeria

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Abstract

Using a recursive structural vector autoregressive model and quarterly data from 1986Q1 to 2019Q4, this study examines the transmission mechanism from monetary policy instruments, specifically the monetary policy rate, base money, and nominal exchange rate, to outcome variables (prices and credit to the private sector) in Nigeria. The data showed structural breaks in 2004Q2, 2009Q3 and 2014Q3, which coincided with the 2004 banking consolidation, the 2009 Sanusi-led regulatory measures and the appointment of Godwin Emefiele as the Governor of the Central Bank of Nigeria in 2014. Accordingly,

policy instrument transmission tests were conducted along three scenarios – 2004, 2009 and 2014 – to evaluate the changes that may have been imposed on the policy transmission mechanism by the reforms. Under the 2004 consolidation scenario, the reforms strengthened only the interest rate anchor (monetary policy rate), causing it to be effective in influencing credit to the private sector (CPS). Innovations in other monetary policy instruments led to insignificant responses in the outcome variables. Even base money, which previously impacted both prices and credit to the private sector, became insignificant and ineffective after 2004. Sanusi’s regime did not strengthen the impact of any of the monetary policy instruments on prices and credit to the private sector. Base money, that impacted outcome variables in some periods before 2009, became insignificant thereafter. Similarly, the 2014 development and sectoral support programmes under Emeziele also did not strengthen monetary policy instruments. Overall, the study affirms the position that monetary policy reforms may not always strengthen policy instruments to regulate or influence prices and credit to the private sector, especially when the transmission is indirect.

Introduction

Two regimes broadly characterize monetary policy operations in Nigeria: the pre- and post-structural adjustment programme (SAP) regimes. The pre-SAP (before 1986) regime featured the direct application of monetary policy instruments, such as credit ceilings, selective credit controls, administered interest and exchange rates, prescription of cash reserve requirements and special deposits by the Central Bank of Nigeria (CBN). Monetary policy transmission was largely direct, policies were predetermined, and regulation was tight. Interest rates were fixed at relatively low values to encourage investment growth while special deposits were allowed to reduce the amount of free reserves and to boost the credit creating ability of banks. The post-SAP period was different and involved the use of indirect instruments. Interest rates were deregulated, and banks were allowed to determine the cost of capital based on negotiations with customers. The CBN varies the monetary policy rate (MPR, formerly the minimum rediscount rate, or MRR) based on its reading of economic indices and to signal the direction for commercial bank rates. It also uses open market operations for Treasury bills (TBs) and repurchase agreements (REPOs), reserve requirements, CBN securities and moral suasion as complements (Ajayi and Atanda, 2012; Chuku, 2009; Okwo *et al.*, 2012; Neaime, 2008). Under this regime, monetary policy instruments operate through transmission mechanisms where the initial impacts are on the demand, supply and availability of credit. Focus channels include money supply, interest rates, security prices and the liquidity of commercial banks. When, for example, the central bank decides on a contractionary/expansionary monetary policy, it raises/lowers the policy rate and subsequently decreases/increases the volume of loan advancement and output. This discourages/encourages total bank lending.

The challenge with indirect transmission is that outcomes are not guaranteed. Given that it works through incentives, the pull for right behaviour or the sanction for wrong behaviour must outweigh the push for wrong behaviour if operators are to act in a manner that is consistent with policy makers' set objectives. Where this condition is not met, the entire logic underpinning indirect transmission crumbles. For example, while the central bank can reduce the policy rate to increase liquidity, and therefore lending to the private sector, it does not follow that deposit money banks (DMBs) and other financial institutions would automatically lend the excess funds to the private sector. For every fund, there is an alternative use. Where returns to investment in government securities, or any other guaranteed sector, are as high as or higher than returns to lending to private businesses, financial operators may choose the former. For poor countries where the business environment is already very risky, accessing funds from financial institutions becomes an even more uphill task for the private sector.

For many years in Nigeria, and consistent with the above thinking, round-tripping of funds through foreign exchange purchase and resale was much more commercially viable for commercial banks than lending to the real sector with all the attendant risks. Simultaneously, the private sector appeared crowded out of the credit market by strident demand by (especially subnational) governments. Heavy moral suasion by the central bank and other government agencies could do nothing to change this. Therefore, even when the central bank relaxed its monetary policy to enhance the capacity of DMBs, the private sector remained outcompeted by such additional liquidity. The situation was compounded by high inflation that rubbed off on interest rates so that changes in the MPR appeared so marginal as to altogether be considered cosmetic and of little consequence. For example, a 50-basis-point change in the interest rate may help shape the decision of an investor in a business environment where the lending rate is 2.5%, but it may not do much for an investor in an environment with a 25% interest rate.

This concern is heightened for the Nigerian financial environment that appears weak, with inherent imperfection in the goods and labour markets and sticky prices that combine to reduce the pass-through of monetary policy innovations to prices. Therefore, it is possible that such innovations end up having little or no real effects on the economy (Chuku, 2009). These and similar circumstances raise questions about the effectiveness of monetary policy transmission as an instrument for improving long-term real-sector growth.

Questions about the effectiveness of indirect monetary policy, especially in low-income countries (LICs), are not new or unique to Nigeria. Adam *et al.* (2019) suggest that the monetary policy transmission mechanism may be weak and unrealistic in many low-income African countries. Therefore, despite best intentions, the authorities' capacity to use monetary policy tools to engender long-term real-sector

development regularly falls short of achieving the required results. This is made more difficult by the fact that the transmission from policy to effect is rarely measured. As expected, a large body of literature has emerged on the monetary policy transmission mechanism in low-income countries (Mishra *et al.*, 2012; Mishra and Montiel, 2013; Raghavan *et al.*, 2011; Mbowe, 2016; Afrin, 2016, among others). A few of these, such as Ogbonna and Uma (2014) and Anyawu *et al.* (2017), focused on Nigeria, but adopted atheoretical methods of analysis. None of the studies thus far have dealt with transmission through DMBs, and it appears that only Chuku (2009) adopted a recursive structural vector autoregression (SVAR) approach in his study on Nigeria, and that work is over a decade old.

While there may be disagreement on the nature and sequence of the effect of monetary policy, there is no question that changes in the macroeconomic environment, structure of the economy or financial regimes have an impact on the monetary policy transmission. Changes such as financial institutions' balance-sheet positions, financial sector technology or expectations concerning future policy can alter the effects of a given monetary policy measure (Kamin *et al.*, 1998). Consequently, it is regularly advised that central banks need to be aware of and continuously reinterpret the channels of transmission of monetary policy in light of the impact of structural changes. Nigeria has had a number of industry-wide, macroeconomic, and institutional changes that have affected the financial system. The most prominent of these is the 2004 Banking Consolidation Programme, which increased the minimum required capitalization of banks by 1,250% with a deadline of just one year, leading to significant mergers and acquisitions that brought down the number of commercial banks in the country from 89 to only 25, with increased liquidity among those that remained. The 2008/2009 financial crisis also occurred, where the response of the central bank was to hound industry players, affecting the perception and practice of credit advancement. What these and similar programmes might imply for monetary policy transmission is yet to be fully explored. For example, it is important to understand the relative effectiveness of different monetary policy tools and how they might have been affected by the capital restructuring and other changes in the macroeconomic and/or financial industry.

The objective of this study is therefore to evaluate the transmission mechanism from policy instruments of the central bank to outcome variables, taking into consideration regime changes and associated banking sector reforms. The specific objectives include an evaluation of the:

1. effects of major changes in the banking sector following the 2004, 2009 and 2014 banking consolidation and reform programmes on monetary policy transmission in Nigeria; and

2. effectiveness of specific monetary policy instruments in the transmission of monetary policy outcomes following these reforms and comparing them across the different regimes.

Few empirical studies have been carried out in the area of monetary policy transmission mechanisms in Nigeria (Chuku, 2009; Ogbonna and Uma, 2014; Anyawu *et al.*, 2017). None of these studies factored in possible changes that may have arisen in the transmission mechanism because of reforms and regime changes. This study intends to fill that gap.

Monetary transmission mechanism in Nigeria: Stylized facts

The history of the monetary policy frameworks of the CBN consists of two broad regimes: an exchange rate-targeting regime that commenced at the bank's inception in March 1959 and ended in 1974, and a monetary-targeting regime that remains in force. Under the exchange rate regime, the Nigerian Pound, the local currency at the time, was fixed to the British Pound (CBN, 2017). With the civil war and the attendant increases in imports, consumption and inflationary pressures, the Nigerian Pound was devalued in 1967 and pegged to the US Dollar. That was followed by the collapse of the Bretton Woods system of fixed exchange rates in 1974 and the CBN had to switch to an alternate monetary-targeting framework. The monetary-targeting framework derives from the quantity theory of money, which proposes a direct relationship between changes in money supply and domestic prices and inflation. Thus, policy intervention entails controlling monetary aggregates by tweaking the policy rate in response to ensuing monetary developments, with the goal of maintaining low and stable inflation (CBN, 2017).

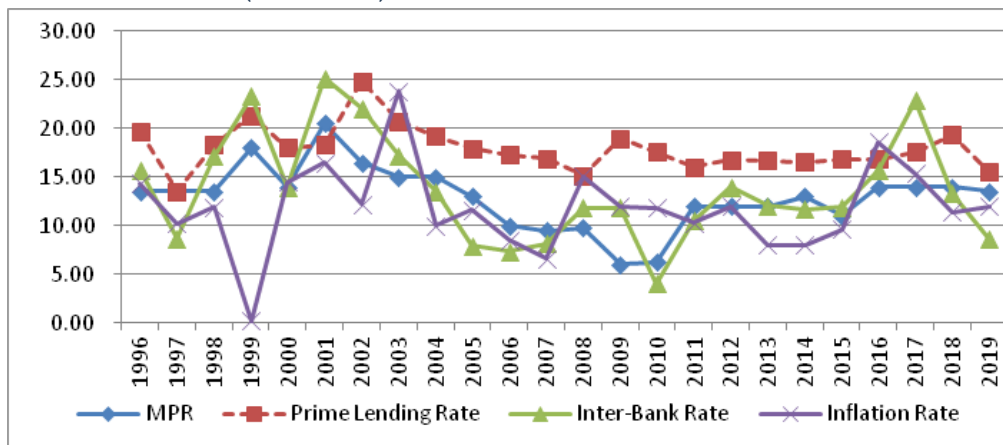
Monetary targeting prior to 1986 used direct monetary instruments such as credit ceilings, selective credit controls and administered interest and exchange rates, among other measures. During this period, interest rates were fixed at low values to encourage investment. In 1986, the interest and exchange rates were deregulated as part of the measures of the SAP, allowing commercial banks to determine deposit and lending rates while the central bank focused on regulation. This meant that the monetary authority had to rely on incentivizing "correct and desirable" behaviour on the part of DMBs and other financial institutions through indirect instruments. Most policy instruments were designed and expected to affect the operations of banks through their response to incentives. However, it is not clear that these instruments had the expected effects on financial institutions' operations and behaviour. The deregulation period was characterized by rapid fluctuations in the policy rate, i.e., the MRR that was replaced in 2006 with the MPR. For example, following banking consolidation, the CBN continuously reduced the policy rate from 15% in 2004 to

9.25% in 2010. Evidence on the engagement of monetary policy instruments and the resulting outcomes since 1986 can be brought together as a few stylized facts, as follows:

1. Engagement of the MPR as a tool for managing prices has had mixed outcomes. Deregulation assumes the transmission of changes in the policy rate through the market mechanism to commercial bank rates, and that this should lead to changes in credit. While this obtains for some years, there are huge outliers. The outcomes of changes in policy instruments have not been consistent. For example, the CBN increased the MPR from 6.0% to 6.2% between 2009 and 2010. The prime lending rate responded by falling from 18.9% to 17.5% (see Figure 1). Meanwhile, in anticipation of an uptick in inflation emanating from 2015 election spending, the CBN increased the MPR to 13.0% in 2014. The measure appeared helpful in that the inflation rate only increased marginally from 8.0% to 9.6% and remained at single digits throughout 2015. However, by 2016 it jumped to 18.6%.

In the same vein, a key intermediate target of changes in the MPR is the interbank rate. Ideally, interbank rates should influence the lending rate and, ultimately, credit to the private sector. Again, the effects of the MPR on interbank rates have been inconsistent. For example, when the MPR was increased from 6% to 6.2% in 2010, the interbank rate counterintuitively fell from 11.8% to 4%. Similarly, when the MPR was reduced from 10% to 9.5% in 2007, the interbank rate increased from 7.3% to 8.1% (see Figure 1). Overall, it appears that a number of other factors affect the potency of the MPR in influencing aggregate prices at each particular time.

Figure 1: Trends in monetary policy rate, prime lending rate, interbank rate and inflation (1996–2019)

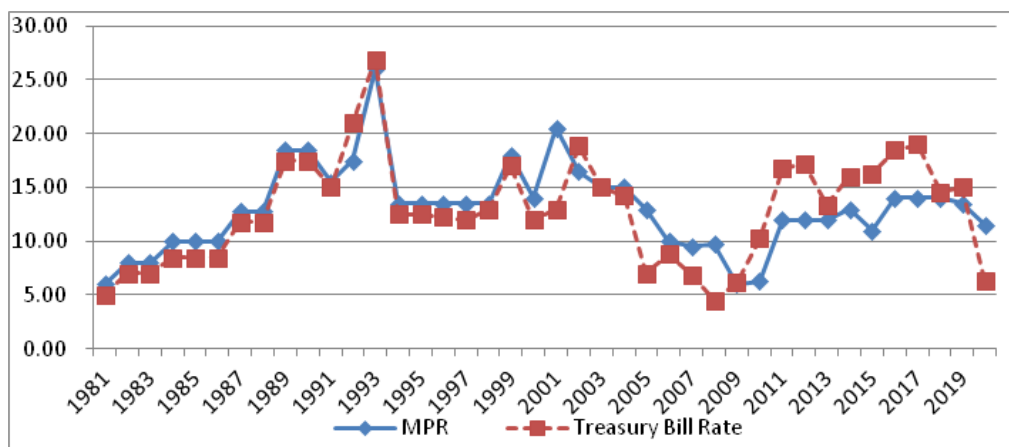


Source: CBN Statistical Bulletin.

Figure 1 shows the relationship between the MPR, prime lending rate, interbank rate and inflation from 1996 to 2019. It reveals that the outcomes of the changes in these monetary policy instruments by the monetary authorities over these periods have not been consistent with economic expectations.

2. Although the goal of monetary policy has been to encourage credit to the private sector, the management of different rates to incentivize this has not been consistent. For example, the MPR has trended close to the Treasury bill rate (TBR). As shown in Figure 2, returns to government financial instruments like the TBR and expected returns from private investment have been close to each other. In an environment where power failure, infrastructure deficit, rudimentary technology and instability in government policies are just a few of several factors that further tax returns to private investment, risks to private investment are sometimes too high. Thus, even with the best intentions, real-sector outcomes may not mirror monetary policy intentions.

Figure 2: Trend of monetary policy rate and Treasury bill rate (1981–2020)



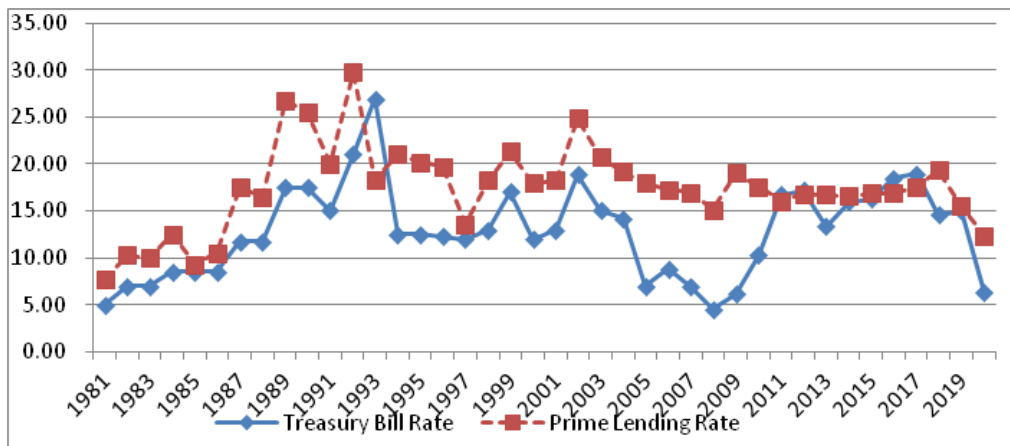
Source: CBN Statistical Bulletin.

Figure 2 shows the relationship between the MPR and TBR. They trended together and at very close values over the period, indicating that a tweaking of the MPR instrument by the monetary authorities to influence interest rates and then credit to the private sector may be weakened by the apparent incentive for commercial banks to rather invest in TBR, thereby decreasing loanable funds.

3. According to the central bank, the elephant in the room is fiscal dominance. While monetary policy is supposed to complement fiscal policy, the latter has posed a key challenge to the former. Revenue for all tiers of government in the country is mainly from oil receipts, the latter being a function of the international product market, which is outside the control of policy makers in the country. By contrast, expenditure items are many and varied. The fiscal position of

government is bedeviled by budget indiscipline, poor accounting, high debt, incoherent expenditure patterns and other institutional and process hiccups, with the attendant distortions they bring to the economy. In a bid to control the challenge from fiscal policy, the central bank consistently appears to fire-fight, either mopping up excess liquidity or pushing out resources on an ad hoc basis to combat illiquidity. Partly as a result, the government's TBR regularly competes with lending rates, as shown in Figure 3.

Figure 3: Trend of Treasury bill and prime lending rates (1981–2020)



Source: Data from CBN Statistical Bulletin.

Figure 3 shows the relationship between the TBR and the prime lending rate. Both trended in the same direction and, in most cases, in a close range over the period, indicating that reducing the interest rate to increase credit to the private sector may be effective given the incentive to rather invest in the TBR than borrowing for productive investment.

4. Ideally, the relationship between credit to the private sector and the TBR ought to be inverse. The literature posits that a rise in the TBR could shift the preference of commercial banks away from advancing loans to the private sector to investing in TBs. This was the case during a large part of the sample period. For example, between 2009 and 2011, the TBR rose from 6.13% to 16.8%. Within the same period, credit to the private sector fell from N102.47 billion to N97.34 billion. Under such circumstances, if increases in the TBR are not properly managed, commercial banks would invest more in TBs and advance less credit to the private sector.
5. The banking sector consolidation of 2004 seems to have had some effect on credit to the private sector relative to credit to the public sector. Total credit to the public sector moved closer to credit to the private sector. Following the consolidation, credit to the private sector significantly outstripped credit to the public sector

as banks began to provide margin facilities for the purchase of shares and other trading activities. However, following the focus of the next administration of the CBN on risk management, credit to the private sector stagnated while credit to the public sector shot up, as shown in Table 1.

Table 1: Credit to the private and public sector (1995–2018)

Period	Credit to private sector (N'bn)	Credit to public sector (N'bn)
1995–1999	15.63	3.446
2000–2004	24.126	10.362
2005–2009	58.882	19.832
2010–2014	114.972	30.84
2015–2018	133.5425	78.0375

Source: CBN Statistical Bulletin, various issues.

Table 1 shows the relationship between credit to the private sector and credit to the public sector from 1995 to 2018. It reveals that the growth of credit to the private sector over the period stagnated against the growth of credit to the public sector owing largely to the adoption of some disciplinary measures.

- The effect of sentiments from the monetary authorities can be very important, probably as important as the effect of instruments, for the outcomes of monetary policy. While the consolidation appeared to be a major success, the administration that came after Soludo inherited or found itself in the midst of challenges emanating from the 2008 financial crisis. The Governor, Mallam Sanusi, instituted rules that led to a clamping down on managing directors of some banks like Union Bank, Intercontinental Bank, Oceanic Bank, Afribank and Finbank. The atmosphere created by these actions was that of fear and a general sense of insecurity in the financial system. This led to stagnation in the growth of credit to the private sector to such an extent that between 2014 and 2018, credit to the public sector more than doubled (from N30.8bn to N78bn) compared to a marginal rise of only N18bn in private sector credit (from N114.9bn to 133.5bn) (see Table 1).

Sources of data

This study employed quarterly data covering the period 1986Q1 to 2019Q4, marking the period of deregulation of interest rates in Nigeria. However, diagnostic tests indicated multiple break points in 2004Q2, 2009Q3 and 2014Q3. The three break dates coincide with specific regime changes (transitions) in the apex bank, the Central Bank of Nigeria. In 2004, the Soludo-led CBN embarked on banking consolidation with far-reaching effects on the structure of the banking sector. In 2009, he was replaced by Mr. Sanusi who approached banking regulation with a focus on intensifying risk

management, which was a major departure from the Soludo regime. In 2014, Mr. Emezie took over from Sanusi and changed the focus of regulation. Thus, each regime undertook a form of banking reform. Therefore, the periods of analysis are: pre-2004 regime change/banking consolidation (1986Q1–2004Q1), post-2004 regime change/banking consolidation (2004Q2–2019Q4), pre-2009 regime change/consolidation (1986Q1–2009Q2), post-2009 regime change/consolidation (2009Q3–2019Q4), pre-2014 regime change/banking reform (1986Q1–2014Q3) and post-2014 banking reform (2014Q4–2019Q4).

The set of quarterly data for this study consists of CPI reflecting the following price changes: BM, which reflects quantity-based monetary policy; MPR; NER, which is important to reflect foreign price effects in a particularly import-dependent economy; and DMBs' CPS, reflecting the credit channel. The data were sourced from the Central Bank of Nigeria. Some of the datasets used in this study have not been published online on a quarterly basis. The research team therefore contacted and worked closely with officials from the Statistics Department of the CBN to access the data. Specific efforts were made to keep the sources of data limited to one source (the CBN) for consistency in definitions and units of measurement, to ensure that the results of the study are not unduly affected by variations in data owing to a diversity of sources.

Conclusion and policy implications

This study evaluated the transmission mechanism from central bank monetary policy instruments to selected macroeconomic variables. Following a general evaluation covering the post-liberalization period (1986 to 2019), it looked at the changes that may have occurred in the transmission mechanism of the policy instruments of interest given the 2004, 2009 and 2014 regime changes, and the reforms in each regime. The study used quarterly data spanning 1986Q1 to 2019Q4 that were organized into five subgroups: 1986Q1–2004Q1, 2004Q2–2019Q4, 1986Q1–2009Q2, 2009Q3–2019Q4 and 1986Q1–2014Q3, following the breakpoint results. It then used a recursive SVAR model to track the responses of target outcomes (prices and credit to the private sector) to innovations on monetary policy instruments (MPR, BM and NER). The results obtained from the subsample analysis of the 2004, 2009 and pre-2014 regime changes show that the implementation of banking sector consolidation under Chukwuma Soludo strengthened the interest rate anchor (MPR), causing it to become effective in influencing CPS. However, it did not improve the responses of prices to shocks in either the MPR or other monetary policy instruments, nor did it improve the response of credit to the private sector to innovations in BM and NER. In fact, BM, which significantly impacted both the outcome variables CPS and CPI pre-2004, became weak and insignificant post-2004. Sanusi's regime, which pursued increased regulation, did not strengthen the transmission of monetary policy instruments (MPR,

BM and NER) to prices and private sector credit. Likewise, BM, which was significant in some periods before the 2009 reforms, became insignificant in all periods after 2009. The Emefiele regime focussed more on development programming and sectoral support and did not significantly improve the effectiveness of the monetary policy instruments (MPR, BM and NER) in influencing either credit to the private sector or consumer prices.

Policy implications

The findings of this study have a number of implications for policy and research. For banking sector consolidation under Soludo, the reform did not only achieve its major aim of broadening the capital base of Nigerian banks, but it also strengthened the MPR instrument causing it to significantly influence credit to the private sector. Every other policy tool was found to be insignificant in regulating target outcomes post-reform. The response of credit to the private sector to innovations in the MPR was expected with such reforms, while the response of policy instruments such as BM that was hitherto significant in influencing both outcome variables (prices and credit) pre-reform, but became insignificant post-reform, was not expected. The increased capital base of DMBs did not necessarily translate to their ability (or willingness) to alter private sector credit in response to the authority's alterations to BM. The above has clear implications. First, it implies that DMBs may have preferred to invest in TBs rather than advancing credit to the private sector, even when monetary authorities intended to achieve the latter. This aligns with the trend in Figure 2, which shows a co-movement of the TBR and lending rate. To this effect, there is a need to deploy additional compliance measures for reform activities targeted at regulating the behaviour of banks. Second, it is important to note that in policymaking, it is understood that one instrument is hardly enough for more than one target. While the reforms may have targeted the improved efficiency of policy instruments, this was implicit. For example, the consolidation exercise explicitly targeted an increased capital base for stability, while all other targets were implicit. The explicit targets were achieved. To achieve the implicit ones, other policy measures/instruments would be needed, and it is not clear that these were engaged. Third, when the environment changes, as was the case across the three regimes, the monetary authorities need to follow up with complementary measures aimed at ensuring the continued effectiveness of policy instruments. The nature of such measures would depend on the changes experienced. In addition, there may be the need for yet other complementary measures to ensure compliance by banks, or measures that minimize the ability of players to sabotage the goals of a policy.

Conversely, the results indicate that both under the 2009 Sanusi-led reform regime and the 2014 Emefiele reform activities, all monetary policy tools were insignificant in influencing the target outcomes (prices and credit to the private sector). In the Sanusi-led reform, we first note the potential importance (if not altogether effect) of

stakeholder sentiments on the relative effectiveness of monetary policy instruments on outcomes. Sentiments, as we know, can be very important, probably as important as the instruments, in influencing the outcomes of monetary policy. Second, the clampdown by the administration at a time when both the spill-over effects of the consolidation exercise and the global financial crisis were hurting the industry was a major disincentive to operators. The most debilitating effects were felt in the area of credit to the private sector. The atmosphere of insecurity felt in the financial system led to the deliberate withholding of advances in the private sector. In an environment where risks to private sector investment are very high, such as in Nigeria, the incentive to divert resources away from private investment is high. So, when bankers realized they could be personally liable for official credit advances, most top executives deliberately tread the path of caution. Therefore, it did not seem to matter in which direction policy went, credit advances pursued an independent path – away from the private sector. For the financial sector, therefore, it is critical for the success of policy measures to ensure that expectations and sentiments are not pushed to extremes.

In the case of Emeziele's reforms, more emphasis was placed on development programming and sectoral support. While this is good, there are certain concerns. First, it is not clear how and to what extent such support helped the efficacy of monetary instruments. There have been concerns about the synergy and coordination between monetary and fiscal authorities, and some have held that the CBN's support could have been channeled through or anchored by the executive arms of government while the central bank focused on its core mandate of monetary policy. Second, it is not clear that the CBN's interventions and monetary policy measures have been complemented by matching targeted fiscal measures. For a very long time, there has been weak synergy between monetary and fiscal policies, with the former perpetually struggling (or appearing to struggle) to react to the excesses of the latter. This weak synergy naturally increases the difficulty with which monetary instruments transmit to target variables and signal the overall policy direction. It could also impact the seriousness with which industry players respond to specific monetary measures.

The Nigerian experience – the ineffectiveness of monetary policy instruments in the three regimes (some in 2004, and all in 2009 and 2014) – could have huge implications vis-à-vis other countries, especially developing countries that have undertaken financial reforms since the 1990s. Drawing from eight countries' (Argentina, Bulgaria, Ecuador, Egypt, India, Kenya, Tanzania and Uganda) financial reform experiences, Galbis (1995) found that although experiences differed across countries, one of the main general recommendations centres around the need for better performance in the conduct of monetary policy in all countries except in Argentina. This may be an indication that banking consolidation in most developing countries may have to be no more than a preliminary step towards long-haul reforms in the financial industry that are needed to optimally strengthen monetary policy transmission. This thought is captured by Baldwin's

famous statement regarding the WTO's efforts at reforming and liberalizing world trade through tariff reduction. According to him: "...the lowering of tariffs has, in effect, been like draining a swamp. The lower water level has revealed all the snags and stumps of non-tariff barriers that still have to be cleared away" (Baldwin, 2000). For most developing countries, and Nigeria in particular, banking sector consolidation could only have been draining the "banking sector swamp", which revealed underlying "macroeconomic stumps" that need to be cleared. Such stumps are likely connected to a wider range of institutional bottlenecks, macroeconomic clogs and external sector imbalances that may not have emanated from the financial sector alone. For example, while lowering the MPR may signal the willingness of monetary authorities to increase credit advancement as well as reflate the economy, other institutional bottlenecks associated with obtaining credit from DMBs may weaken market response. It is therefore necessary that reforms should be considered alongside the institutional bottlenecks and macroeconomic clogs that could render the reforms ineffective if not addressed.

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Mission

To strengthen local capacity for conducting independent, rigorous inquiry into the problems facing the management of economies in sub-Saharan Africa.

The mission rests on two basic premises: that development is more likely to occur where there is sustained sound management of the economy, and that such management is more likely to happen where there is an active, well-informed group of locally based professional economists to conduct policy-relevant research.

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