SENSITIVITY OF EXCHANGE RATE TO CBN MONETARY POLICY COMMUNICATIONS 2010-2020

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Abstract
Over the last decade, central bank communication has become an increasingly essential policy instrument for monetary authorities. This is due to the significant impact that central bank communication has on economic agents' expectations and, as a result, their economic decision-making. This study therefore investigated the sensitivity of Exchange rate to MPC communication from 1st January, 2010 to 30th June, 2020 series of test were carryout and EGARCH was chosen as the appropriate techniques in which dummy variable was used to capture the meeting days in the variance equation. Data of monetary policy were sourced from CBN website. The results of an EGARCH model show that the communications between central bank and the money market are considerably informative and therefore assist to reduce market 'Exchange rates' volatility. The study has so concluded that the Communication from the Central Bank in Nigeria has an impact on the desired direction of Exchange. One policy implication of this conclusion is that it is clear enough about the desired policy orientation for the future that CBN communique substance of MPC meetings will guide the market in the proper way. This is consistent with the recognized literature, that if a central bank opens the foundations for monetary policy implementation up to the markets, it raises the odds of controlling agents' expectations. Therefor the study recommends that the meeting should be sustained.

Keywords: MPC, EGARCH, Exchange Rate, Communications

1. Introduction and Background

The conduct of monetary policy in Nigeria has changed dramatically since the advent of the indirect, market-based strategy in 1993. As a result, Open Market Activity (OMO) has emerged as a key monetary policy tool, aided by other traditional instruments. (For example, see Blinder et al., 2008). Indeed, when OMO was to be carried out, the information content of the central bank's correspondence was limited to the policy direction, not the magnitude of the predicted movement in money supply or interest rate. (see Guthrie and Wright, 2000). The economy and the public were left to conclude from the quantum of open market sales or transactions the extent of the change in money supply. The old theoretical idea that monetary policy had to surprise the public was the basis of this hidden role of central banks, since only unanticipated changes in money issues for output stabilization were necessary (Binder, et al., 2008). This had a significant effect on central bank communication (CBC) design and policy. Therefore, central banks were cautious not to make it possible to completely predict all the changes in the supply of money by not supplying any information that would directly signal the future course of monetary policy. The central bank was neither supposed to interact effectively with the

market nor to be clear about the way monetary policy decisions were made. This perspective has been modified to its extreme opposite by a variety of incidents in the last two decade and Such events include, first, the increased independence given to many central banks, which has increased the need for transparency and, subsequently, for communication. Second, the adoption of inflation targeting (IT) by a growing number of countries has put great emphasis on central bank contact and transparency since its introduction by New Zealand in 1990. Third, the development of financial markets has intensified the value of contact, primarily because of the demands of market participants. (Amato, Morris and Shin, 2002).

Modern central banks are attempting to convey their policy decisions in the most methodical and efficient manner possible, as well as to be transparent about the processes, procedures, and assumptions that underpin such judgments. It has now become regular practice for central banks to attempt to telegraph to the market the likely direction of their monetary policy through various communication channels. Reserve Bank of New Zealand, 1997; Daw, Klaes, and Montagnoli, 2015; and Amato et al., 2002). As a result of these developments, a new communication regime has emerged, in which central banks systematically use a range of communication channels to influence and control market expectations. The ability of central banks to alter market perceptions in the desired direction may be limited by their credibility and transparency. Although credibility is gained when the central bank consistently hits its aim, openness or communication increases credibility by proving to the market the political independence of any monetary policy decision. As a result, monetary decisions are now made by an independent Monetary Policy Committee (MPC), which is likewise extremely open. The minutes of its sessions are promptly made public, together with a communiqué that not only explains the rationale for the decisions reached, but also expresses the Committee's belief in the potential of the project course of monetary policy Market perceptions of the future trajectory of inflation and short-term interest rates will be influenced by signals emanating from this channel of communication. According to the interest rate term structure's expectations concept, expected future short-term interest rates have an impact on longer-term interest rates. This means that if the central bank can persuade the market that higher potential short-term rates are available, it can raise existing longer-term rates without having to raise short-term (official) rates. Furthermore, while communication-based signaling can be a more effective policy instrument in some cases, there are others. Because of long policy lags, signaling could be useful in situations where a central bank has knowledge about a situation that requires intervention in the near future but cannot utilize conventional instruments (Morris and Shin, 2002). As a result, monetary policy communications will improve the effectiveness of monetary policy by indicating its intent or signaling (see for instance, Blinder, et al., 2008, Amato et al., 2002 and Andersson et al., 2012).The theoretical literature on the sensitivity of contact on monetary policy is well established (see Blinder, et al., 2008, for a review of this literature, and also Ehrmann and Fratzcher, 2017). Furthermore, while there is a rising empirical literature on the effectiveness of central bank communication, there is a dearth of evidence from developing countries, particularly those in Sub-Saharan Africa. This research attempts to contribute to the field by quantifying the impacts of central bank interaction on selected money market exchange rates in Nigeria. The monetary authorities care about whether or whether a type of central bank communication effects monetary policy outcomes for at least two reasons: First, signaling could be utilized as a monetary policy instrument if it is discovered that contact has a significant impact on, say, the market exchange rate. As a result, the central bank will need to develop an effective communication strategy that allows expectations to be managed in the correct direction.

Second, because it has the potential to enhance market volatility, scientific awareness of its impact would highlight the risk of poor or noisy communication, making it undesirable.

To forecast the outcome, this study calculates the impact of monetary policy signals that accompany one type of central bank communication, the MPC communiqué and minutes of its meetings, on daily money market rates from May 2011 to July 2020. We track the current consequences of policy conduct in response to the communiqués. We discovered that money market rates were significantly more volatile in the weeks following the communiqué's release than on previous days. As a result, we argue that the communiqué includes information that has distinct implications for monetary policy outcomes. The study's empirical question is whether such communications and signals have discrete and independent effects on exchange rates, hence improving monetary policy effectiveness in Nigeria. The monetary authorities, particularly the MPC, will surely benefit from the empirical response to this question.

As a result, the goal of this research is to see if MPC communications can be used as a substitute or supplement to achieve price stability in Nigeria.

2. LITERATURE REVIEW

THEORETICAL MODEL

It is generally recognized that that the expectations of market participants about the future direction of supply/demand for foreign exchange is one of the determinants of exchange rate. Because of the uncertainties embedded in expectations formation by the market agents, central bank communication becomes an important tool in reducing these uncertainties and hence the shocks in the foreign exchange market. As Rezessy (2013) argues the theory does not provide an unambiguous answer on how monetary policy affects the exchange rate. The traditional view maintains that an increase in the domestic interest rate makes domestic debt more attractive to foreign investors and generates demands for the domestic currency. In a standard uncovered interest rate parity framework, an increase in the domestic interest rate implies a strengthening of the domestic currency assuming that exchange rate expectations and the risk premium are unchanged. Policy-induced changes in interest rates can also affect the exchange rate. The exchange rate is the relative price of domestic and foreign money, so it depends on both domestic and foreign monetary conditions. The precise impact on exchange rate of an official rate change is uncertain, as it will depend on expectations about domestic and foreign interest rates and inflation, which may themselves be affected by a policy change as well as central bank communications. In other words, uncovered interest rate parity is said to be a situation where no-arbitrage condition is satisfied without the use of a forward contract to hedge against exposure to exchange rate risk. Investors are indifferent among the available interest rates in two countries because exchange rate between those countries is expected to adjust such that the naira return on naira deposits is equal to the naira return on foreign deposits, thereby eliminating the potential for uncovered interest arbitrage profit. Uncovered interest rate parity helps explain the determination of the spot exchange rate (Chinn, 2007). The equation below represents uncovered interest rate parity.

$(1+i_{₦})= (1+i_c)$…….(4)

Where:

$E(S_{t+k})$ = is the expected future spot exchange rate at time t.

K = is the number of periods into the future from time t.

S_t = is the current spot exchange rate at time t.

$i_{₦}$ =is the interest rate in Nigeria.

i_c = is the interest rate in a foreign country.

Following the argument of Rezessy, (2013) and Chinn, (2007) the Uncovered Interest Rate Parity (UIP) shows that central bank communication can affect exchange rate formation by influencing peoples' expectations on future exchange rate, or its rate of depreciation. It is therefore seen as the appropriate framework of this study. This is so because of the uncertainties in forming expectations, and the asymmetries of information in the market, central bank communication is very important tool in reducing the uncertainties in terms of the market expectations. However, other things being equal, an unexpected rise in the official rate will probably lead to an immediate appreciation of the domestic currency in foreign exchange markets, and vice versa for a similar rate fall. The exchange rate appreciation follows from the fact of those higher domestic interest rates, relative to interest rate on equivalent foreigncurrency assets, makes domestic assets more attractive to international investors. This leads to higher demand for domestic currency relative to foreign in the forex market. From the above transmission mechanism of exchange rate, we can see that an increase in interest has an effect on the exchange rate, and the effects of expectations on exchange rate. Therefore because of the uncertainties in forming expectations, and the asymmetries of information available in the market, central bank communication is very important tool in reducing the uncertainties in terms of the market expectations (see Rezessy, 2013).

More recently, increased focus has been on the role of communication for monetary policy. Blinder (1998) and Bernanke (2004) argued that successful communication is crucial for ensuring the effectiveness of monetary policy itself. A monetary authority usually controls only a single interest rate, the overnight rate, while it has only has indirect influence over those asset price that really matter for the economy, which are long-term interest rates, stock prices and exchange rates. These assets prices are highly dependent on market expectations and the credibility of the authority. Communication is so crucial for the success of monetary policy precisely because it has important influence on expectations and credibility. From the argument above we can see the link that communication has impact on expectations and the assets price (exchange rate) is highly dependent on market expectation as well. Therefore, we can see how the expectation theory has a link to communication and exchange rate.

Blinder (1998) notes that most central bank generally control only the overnight interest rate, an interest rate that is relevant to virtually no economically interesting transaction. Monetary policy has important macroeconomic effects only to the extent that it moves financial market prices that really matter-like long-term interest rate, stock market values and exchange rates. The links from the direct lever of monetary policy (the overnight rate) to the prices that matter depend almost entirely upon market expectations. For instance, one-year rate are, in the first instance, affected by the market's expectations of overnight rate over the year as a whole. To this extent, market expectations of the intentions of the central bank are pivotal in determining prices and communication between the central bank and the market is critical. Blinder goes on to argue that this expectation mechanism works best in an environment of central bank transparency. Since market expectations are shaped in part by the future course of action of the central bank, monetary policy is more effective if it is more

effective in coordinating market expectations.

Empirical Literature

The work conducted severally to quantify the impact of the communication on the economics agents' expectation empirically, most of the literature analyses the effects of communication on exchange rate their findings were misused. While Geraats, Petra (2010) find that effects of the ECB to support the Euro-US$ exchange rate did not affect its level but rather increase volatility. Fratzscher (2014) shows it that can influence both the level as well as the volatility of the exchange rate. His result shows that it moves in the desired direction and reduces market volatility. Using high frequency, exchange rate data Geraats, Petra (2010) report that ECB communication has only short run effect on the Euro-US$ exchange rate.

Lamla et al., (2013) from Neuenkirch, Matthias (2012) distinguish three channels and said communication can be welfare enhancing. He said communication can reduce transmission lags of monetary policy actions. The European Central Bank (ECB) controls overnight exchange rate that has an effect in the real economy through inflation expectations.

Arguably, a transparent central bank is more credible. He went further to say that communication may reduce volatility in the markets and consequently improve accuracy of monetary policy. Expectations about the future path of overnight exchange rates affect the economy by being incorporated in long-term interest rates, asset prices and exchange rates. It is also argued that central bank transparency and a sound communication can reduce uncertainty in expectations. Because less uncertainty lowers financial market volatility, thereby reducing financial cost and improves efficient allocation of resources. Hence, communication reduces volatility in expectations which in turn offers the central bank a more precise estimate of the future impact of monetary policy decisions and hence increases the accuracy of monetary policy.

Fratzscher (2014), Born,. Ehrmann and Fratzscher, (2010) analyze exchange rate respond to speeches of central bank officials of ECB and provide an evidence that speeches affects the level as well as the volatility of exchange rate. Egbuna (2008) examine the current CBN's communication practices and challenges as well as highlight the need to be proactive in planning a communication policy for the Bank. In the work it is discover that credibility is an attribute needed by the CBN, and establishing it is a challenge faced because inflation is on the increase and no central bank can establish or maintain credibility through communication alone. In other words, it is what you do, much more than what you say. The work also saw a need for CBN to actively promote economic education through a variety of publications and activities for schools in Nigeria. There should also be both internal and external communications. The paper concludes by saying that CBN can help stabilize the economic growth of the economy by reducing the expectations of uncertainty about its monetary policies frameworks and actions.

3 METHODOLOGY

To achieve the central objective of this study, i.e. to examine the effect of central bank communication on exchange rate, this study builds and estimates a variant of the ARCH model, the Exponential Generalized Autoregression Conditional Heteroscedasticity model (EGARCH). The choice of this model is informed by our conceptualization of the effect of communication on the interest rate and exchange rate as well as the nature of the data-high frequency. If communication affects

exchange rate formation, we should expect the release of such information to reduce noise and increase signals, hence reducing the signal to noise ratio. This will therefore change the volatility of the interest rate and exchange rate. Hence, volatility modelling using the EGARCH model would enable us achieve the objective of this study.

SOURCES OF DATA

The study used use daily exchange rate and interest rate time series data for the period 20011-2019. The data for this study depend mainly on secondary sources gotten from Central Bank of Nigeria (CBN). To measure the central bank communication, publications of different types such as communiqués from the MPC meetings, speeches by the Central Bank Governor and official, monthly reports, quarterly reports and annual economic reports, as well as other sources of information from the central bank to the money market will be obtained.

ANALYTICAL FRAMEWORK AND THE MODELS

The theoretical framework for this study is Uncovered Interest Rate Parity (UIP) which shows that central bank communication can affect exchange rate formation by influencing peoples' expectations on future exchange rate, or its rate of depreciation

to achieve our objectives on assessing the impact of Central Bank communication/signal on exchange rate, and also the other one which has to do with determining if CBN's talk reduces volatility in the foreign exchange Market, we employed the Exponential Generalized Autoregressive Conditional Heteroskedasticity (EGARCH) model as suggested by Nelson 1991 used in Emmanuel Yahaya and Sanusi Aliyu (2012) Na'allah Nicodemose (2012) and Cornolly and Kohler (2004). This is because it is use in testing the leverage effect (asymmetric news impact on volatility). The exponential form would allow for asymmetry in the responsiveness of Exchange rate to volatility from policy change.

MODEL SPECIFICATION

The study adapts the methodological approaches of Cannolly and Kohler (2004), Fratzscher (2004, 2006), Reeves and Sawicki (2005), Mariscal and Howells (2013), and Smales (2011) to determine the effect of CBN communications.

We will use the exponential GARCH (EGARCH) model to estimate the impact of central bank communication on exchange rate in Nigeria. This is so because our interest is to test how the release of information by the central bank through communication affect the exchange rate volatility and to know whether this signal reduces volatility and uncertainty in the market for accurate predictability of people's expectations. The analytical techniques that will be employed for this study are the exponential GARCH (EGARCH) model. This is so because we are interested in how the release of oral and written policy statements by the Central Bank of Nigeria (CBN) influences the exchange rate volatility or how CBN communication moves exchange rate in the desired direction or not.

Tests for Normality and Unit Root

To estimate the EGARCH proposed, we will carry out two pre-tests: normality test and unit root test. This is to avoid misleading results, because it is established in the literature that financial assets are prune to unit root and non-normal distribution with time varying second moments. Thus, econometric theory requires that all the variables be stationary before the application of any standard econometric technique.

Exponential Generalized Autoregressive Conditional Heteroskedasticity (EGARCH) Model for Exchange Rate

The justification for using the EGARCH over other methods is because the phenomenon associated with asset price is volatility clustering, that is, period in which the exhibits wide swings for an extended time period. In this case, the EGARCH model captures such volatility clustering which gives it relative advantage over other methods of correcting for heteroscedasticity.

$$\Delta = \propto +(I_t^N - I_t^{us}) + \sum_i x^i X_t^i + {}_i(\beta^i IA_t^i) + (\propto^i I0_t^i) + \varepsilon_t \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (8)$$

Equation (8) above is the change in the log spot exchange rate (Δs_t) which is modeled as a function of the difference in the interest rates between two countries ($I_t^N - I_t^{us}$) both types of interventions are; the macroeconomic control which includes the economic news items like, inflation, output, etc. ($x^i X_t^i$), the actual interventions at the present period by the central bank (i.e. selling and purchasing of the foreign exchange). ($\beta^i IA_t^i$), the oral interventions (communication) at the present period by the central bank (i.e. communiqués, speeches, minutes, reports/release monthly, quarterly and annually). ($\alpha^i IO_t^i$), which constitutes the estimation equation for the conditional mean. The conditional mean equation above will help us achieve the first objective by testing the hypothesis on how the various coefficients are significant in explaining its effect on exchange rate formation and to also examine whether their impact on exchange rate causes volatility or stability. We will also use the mean equation to test whether the shift from actual intervention regime to oral intervention regime is an effective monetary policy tool in achieving exchange rate stability in Nigeria. While the equation (9) below is the variance equation which is modeled using the standard log likelihood function, which has advantage that non-negativity constraint on the coefficient of the mean equation that exhibits strong non-normality. The variance equation also will help us test for non-normality exhibited by the coefficients in the mean equation and the asymmetric information as a result of the signals release by the central bank. This will help us achieve the third objective of testing the credibility of the CBN in terms of how effective and committed they have been in their communications.

$$\text{Log}(h_t) = \gamma + (-) + \delta \log(h_{t-1}) + \rho() + {}_i(^i) + \sum_i(^i) \ldots\ldots\ldots\ldots (10)$$

Where:

Δs_t^N= is the change in the log of exchange rate.

$(I_t^N - I_t^{us})$ =is the differentials of the interest rate of Nigeria and United State.

$\beta^i IA_t^i$ = is the actual interventions at the present period by the central bank (i.e. selling and purchasing of the foreign exchange).

$x^i X_t^i$ = is the macroeconomic control which includes the economic news items like, inflation, output, etc.

$\propto^i I0_t^i$ = is the oral interventions (communication) at the present period by the central bank (i.e. communiqués, speeches, minutes, reports/release monthly, quarterly and annually).

${}_t$= is the error term at the present period.

= is the ARCH term in standard form.

= is a constant.

h_{t-1}= is the variance at the previous period.

h_t = is the variance at the present period.

$\rho()$ = is to measure for the asymmetric information effect on exchange rate.

δ, are the parameters in the model.

The variables use in the work were demand of exchange rate, supply of exchange rate, MPC Signals, Speeches, inflation rate and the MPR was use as the interest rate. The demand and supply of exchange rate are they actual intervention ($\beta_i IA^i_t$), MPC Signals and Speeches are they oral intervention ($\alpha^i IO^i_t$), interest rate (it) and inflation as the macroeconomic control ($x^i X^i_t$). We all measured the variable by collecting data from all these variables except MPC communiqués and speeches that were assign dummies of plus one (+1) for tightening, minus one (-1) for easing and zero (0) for policy target that is neutral.

Diagnostic Test

To estimate the EGARCH proposed in this chapter, we carry out two pre-tests: normality test and unit root test. This is to avoid misleading results, because it is established in the literature that financial assets are prune to unit root and non-normal distribution with time varying second moments

4 PRESENTATION, ANALYSIS AND INTERPRETATION OF RESULTS

In this chapter, we present, analyze and interpret the results and findings of our study. We present and interpret the results of the line graphs on the different series. A descriptive statistics on the series, unit root test, transparency/credibility results and the EGARCH models results are also presented, interpreted and analysed. The ARCH LM Diagnostic Robustness Test was conducted to further ascertain the appropriateness of the models. The result of the ARCH LM tests is also presented.

EMPIRICAL RESULT ON THE IMPACT OF CBN COMMUNICATION ON EXCHANGE RATE

Tests for Normality and Unit Root

To estimate the EGARCH, we carry out two pre-tests: normality test and unit root test. Thus, econometric theory requires that all the variables be stationary before the application of any standard econometric technique. The results for the normality test and unit root test are reporte d in table 4.5a and 4.6a. The Jarque Bera test in table 4.5 rejects the null hypothesis that the variables in this study are normally distributed(i.e p-values < 0.05) Dimitrios and Stephen (2007). This suggests that the EGARCH technique is the most appropriate for this study, given its ability to capture these thereby producing efficient estimates. In performing the stationarity test we used a maximum lag of 4 based on the information criteria, and included intercept except for exchange rate that appears to be trending. We use both the Augmented Dickey Fuller (ADF) and Phillip-Perron (PP) test to find the existence of unit root in each of the time series.

Table 4.5: Normality Test Result of Ex Rate, SS, DD AND INFLATION RATE

	EX	DD	SS	INFLATION RATE
Mean	170.8048	170.2670	171.3425	11.23207
Median	155.2300	154.7300	155.7300	11.10000
Maximum	324.5000	324.0000	325.0000	18.72000
Minimum	66.09000	15.59000	116.5500	4.100000
Std. Dev.	54.16304	54.25042	54.10994	3.501486
Skewness	1.669631	1.652277	1.676710	0.190676
Kurtosis	4.708858	4.719301	4.714162	2.389394
Jarque-Bera	1546.624	1525.212	1559.034	56.96641
Probability	0.000000	0.000000	0.000000	0.000000
Sum	450583.0	449164.4	452001.5	29630.21
Sum Sq. Dev.	7735994.	7760976.	7720833.	32330.68
Observations	2638	2638	2638	2638

Source: Authors Computation Using E-views 9

Table 4.6: UNIT ROOT TEST

	Level		First Difference		
Variable	ADF	PP	ADF	PP	Comment
EX	-2.422846	-2.405720	-43.92373	-67.97546	I(1)
SS	-2.433641	-2.435334	-50.78484	-50.78184	I(1)
DD	-2.353034	-2.349221	-40.61333	-92.48258	I(1)
MPR	-1.219489	-4.219489	-47.38687	-47.38687	I(1)
CRR	-2.454423	-2.517286	-43.21458	-49.59656	I(1)
INF	-21.05086	-15.46069	-47.36032	-560.0081	I(1)
LR	-2.454423	-2.517286	-43.21458	-49.59656	I(1)

Source: Authors Computation Using E-views 9

The result in the table 4.6 shows that exchange rate (EX RATE), monetary policy rate (MPR) inflation rate (INF) and supply (SS) are not stationary at levels but demand (DD) is stationary at levels This can be seen by comparing the observed values (in absolute terms) of both ADF and PP test statistics with the critical values (also in absolute terms) of the test statistics at 1%, 5% and 10% level of significance. The result from the tables above provides strong evidence of non-stationary on exchange

rate, INF and SS in the case of ADF test. This is because both the ADF and PP test statistics are less than the McKinnon critical values at 1%, 5% and 10% level of significance. Therefore, the null hypothesis is accepted and it is sufficient to conclude that there is a presence of unit root in the three variables at levels. But in the case of DD and SS the result provides strong evidence of stationary except SS This is so because both the ADF and PP test statistics are greater than the McKinnon critical values at 1%, 5% and 10% level of significance. Therefore, the null hypothesis is rejected and it is sufficient to conclude that the variables are stationary. The result in table 6 above also reveals that EX RATE, and INF were differenced once and found stationary. This is because both the ADF and PP test statistics are greater than the McKinnon critical values at 1%, 5% and 10% level of significance. On the basis of this, the null hypothesis of non-stationary is rejected and it is safe to conclude that the variables are stationary. This implies that the variables are integrated of order one i.e. I(1).

4.3.2 EGARCH Estimation

Before the exponential GARCH (EGARCH) estimations analysis, we perform statonarity tests on the variables: exchange rate (EX RATE), monetary policy rate (MPR), inflation rate (INF), demand of exchange rate (DD) and supply of exchange rate (SS)..

The choice of the model is as a result of the model selection conducted after modeling the variables using the EGARCH technique by considering some model selection criterion (Akaike and Schwarz information criterion) to determine the impact effect of the interventions on exchange rate in Nigeria. The table below is showing the coefficient, standard error and the probability values of the variables: MPR, INF, DD, SS, MPC and SPEECHES of the conditional mean and variance equation of the EGARCH estimation on exchange rate in Nigeria

Table 4.7: EGARCH Estimation: Conditional Mean Equation

	C	R(-1)	D(mpr)	D(ss)	D(dd)	D(crr)	D(inf)
EX	0.004589 *(16.63729)* *[0.0000]*	0.031593 *(3.830435)* *[0.0000]*	-0.000590 *(-26.22315)* *[0.0000]*	0.501563 *(24.57123)* *[0.0000]*	0.498465 *(2.439054)* *[0.0000*]	3.94E-05 *(5.480800)* *[0.0000]*	0.000429 *(-31.41982)* *[0.0000]*

Source: Authors Computation Using E-views 9

Table 4.8: EGARCH Estimation: Variance Equation

	EX
Mpc dummy	-1.199767 *(2.153539)* *[0.0003]*

Source: Authors Computation Using E-views 9

Table 4.7 presents the estimation result for the contemporaneous effects when controlling for the macroeconomic news inflation (INF), interest rate (MPR), actual intervention (DD,SS) and oral intervention (MPC Dummy). The key result is that both oral intervention and actual interventions in the country have a highly significant contemporaneous effect on the daily exchange rate a day after it occurs. On average, the oral interventions move the daily exchange rate by between -1.199767%. As to actual interventions, these also mostly have a significant effect on exchange rates. But on the contrast, the impact of actual interventions varies substantially. An actual intervention by the Central Bank of Nigeria (CBN) of one billion naira purchase or sale moved the exchange rate by about 0.501563% to 0.498465%. The coefficient of inflation (INF) and actual intervention (DD, SS) show a positive relationship with the dependent variable (EX Rate). Here it also implies that actual intervention raises volatility. While in the case of the oral intervention (MPC, SPEECHES) it shows that there is a negative relationship between exchange rate and oral intervention. This helps us to understand that communication (oral intervention) reduces volatility because the signals conveys by the CBN to the market are true and credible. However, the result reveals the presence of ARCH and GARCH effects (see table 4.7). These effects can be attributed to actual intervention and other macroeconomic variables. Thus, communication has impact on exchange rate and also influences market participant expectation. This result is consistent with Fratzscher (2004 and 2006).

Theoretically the interest rate (MPR) result is consistent with the uncovered interest rate parity framework which says an increase in the domestic interest rate implies a strengthening of the domestic currency. In other words, the traditional view maintain that an increase in the domestic interest rate makes domestic debt more attractive to foreign investors and generate demand for the domestic currency. From the estimation results, we can also see the impact effects of interventions on exchange rate in the Nigeria economy by observing the coefficient of the variables and their probability values which tells us how significant the coefficient of the variables of both the conditional mean and that of conditional variance equation are on the economy. In other words, the probability values tell us at what level of significance is both variables significant or has impact on exchange rate. From the result above, it reveals that inflation (INF) is not significant but actual intervention (DD-SS) and oral interventions (MPC, SPEECHES) are significant at 1%, level of significance.

5. SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

The study aimed at examining the effects of CBN's communications on exchange rate in Nigeria spanning from 2011-2019. To this end, the study started by justifying the increasingly adoption of communication framework in the conduct of monetary policy by central banks around the globe with the CBN inclusive.

This study find out the impact of central bank communication on the daily exchange rate

dynamics in Nigeria. There are broadly two theoretical channels through which central bank communications can affect the dynamics of daily exchange rate. First, communication affects the interest rate formation, which in turn affects the exchange rate via the uncovered interest rate parity relations. Second, because the exchange rate is also directly affected by expectations, central bank communication affects the exchange rate by affecting the way market participants form their expectations. The study used daily naira to dollar exchange rate data for the period 2011-2019 to estimate an EGARCH model, in which the effect of monetary policy action, inflation and Excess of Demand over Supply of foreign exchange, which we interpret as actual intervention, are controlled for in the first-step mean equation. In the conditional variance equation, the effects of communication signals from the MPC communiqués and Governor's speeches, which we interpreted as oral intervention, are estimated. The study reveals that both central bank communication signals (i.e. oral interventions) and actual interventions (excess demand for forex) have indeed been effective in influencing the daily exchange rate dynamics in Nigeria. Communications are not only relatively more effective compared to actual policy action (or actual interventions), but they also generally tend to lower uncertainty and volatility in the markets whereas actual interventions have generally raised currency volatility .

CONCLUSION

The empirical analysis presented in the previous chapter allows us to draw some conclusions about the research question raised at the beginning of this study.

Past decade has witnessed a fundamental regime change in exchange rate policies among developing economies. The United States and Euro area have basically abandoned actual interventions in foreign exchange markets and have shifted almost entirely towards the use of oral intervention policies, or communications to influence the market's expectations to achieve exchange rate stability, while Japan has intensified both oral and actual intervention policies. The major conclusion that can be derived from this study is that because central bank communications were found to have significant effect on the dynamics of daily exchange rate, oral intervention in the Nigeria's foreign exchange market can potentially be used as an effective tool to at least augment the actual intervention, and achieve exchange rate stability. Another interpretation of this finding is that oral interventions influence financial markets not only by signaling future monetary policy decisions or actual interventions, but also by conveying private information that is relevant for the economy and for financial markets.

Overall, the study is an attempt to fill the gap in the literature on the role and importance of communication policy for exchange rates. The empirical focus on oral interventions prove to be as important one for determining whether the regime shift in exchange rate policies in Nigeria over the past decade has been a successful one. Ultimately, the analysis of oral interventions help us learn and better understand what monetary authorities can do or could do better to communicate to the markets and to the public their view about the appropriate evolution of exchange rates and underlying fundamentals.

RECOMMENDATIONS

a. Arising from the empirical findings, this study recommends that CBN should rely more on communication framework in order to influence the interbank rates, this is particularly important in times of financial distress. And this follows that if the bank must increase

the effectiveness and efficiency of monetary policy, the provision of forward looking information in the bank's publications should be the bank utmost priority.

c. The government through the monetary authorities can smoothen out any temporary daily fluctuations in the exchange rate in Nigeria by using communication (oral intervention) instead of using actual intervention. This would reduce cost of actual interventions which raises volatility and markets uncertainty. It also implies in turn that market volatility and uncertainty will be reduced as confirm by our findings or the results.

d. The literature on analysing and understanding the importance of communication (oral interventions) for asset prices, and in particular for exchange rates, is still in its infancy. However, from a policy perspective it is important to understand the role communication may play as a policy tool and what its limitations are. The objective of the research has been to contribute towards a better understanding of this role of communication.

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