Inflation and Inflation Uncertainty in Nigeria; a dynamic causality Analysis

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1 INTRODUCTION

The phenomenal effect and impact of inflation for a growing economy cannot be over emphasized. An inflationary situation is generally characterized by a persistent upward movement in the prices of goods and services. The severity in which an inflationary pressure is exacerbated for a growing economy calls for adequacy in policy measures in combating this trend. However, the magnitude and extent of the adverse impact of inflation depends on whether it is adequately anticipated or unanticipated. A huge dichotomy exists in literature with respect to the relationship between anticipated inflation and inflation unanticipated. In this regards, the nexus between actual inflation and inflation uncertainty and the detrimental impact of inflation uncertainty on output growth in an economy has received extensive coverage. This is predicated on the huge cost of inflation for a growing economy with particular emphasis on the real economic sector.

This study set forth to provide further examination detailing the empirical linkage between inflation and inflation uncertainty for the case of the Nigeria economy form year 2000 up until 2014. A two-fold estimation technique is utilized for this study in line with other rich empirical studies namely; Grier and Perry (1998); Nas and Perry (2000); Fountas et.al (2004) ; Aboagye and Byekwaso (2005); Heidar and Bashiri (2010) and Viorica et.al (2014). In general, the two-fold estimation technique as implied for the current study proceed with the estimation of the conditional variance of the inflation uncertainty series in the context of a GARCH type model. This is then followed by a causality test in the context of the granger causality to help answer the research question of whether changes in inflation granger cause inflation uncertainty and the extent of the directional change for the case of the Nigerian economy. In the context of a managed float exchange rate regime, the Nigeria apex regulatory monetary authority is considering a transition to a full-fledged inflation targeting regime. Hence, the empirical findings of this study provides essential insight on policy issues to be considered in furtherance to the goal of adopting a holistic inflation targeting framework for the Nigerian economy and certainly a variety of emerging economies in Africa.

The rest of this paper is planned in the following order. Section 2 attempts to connect the nexus of inflation- anticipated and inflation uncertainty form a plethora of rich theoretical literature. Section 3 deals with the data, methodological approach and estimation technique with empirical deductions. The last section presents our empirical findings and recommends some policy implications.

2 REVIEW OF LITERATURE

The plethora of theoretical literature on the relationship between inflation and inflation uncertainty can be traced down memory lane to the contribution of Okun (1971).In this seminal work, Okun (1971) reported a positive correlation between inflation rate and inflation variability for a panel of 17 OECD member state. Within the classical debate of the 1970 which focused on the relationship between inflation and unemployment emerged the robust empirical deduction credited to Friedman. In his famous Nobel speech, Friedman (1977) stir up thoughts in his argument noting that as inflation increases a heightened inflation uncertainty becomes eminent.

Two decades on, this submission was upheld by Ball (1992) and is thus referred to as the Friedman-Ball Hypothesis.

It is worth noting that the earlier academic literature on the connection between inflation and inflation uncertainty relied on the use of standard deviation as a proxy for uncertainty. These studies focused instead on inflation variability as opposed to inflation uncertainty. However, with the ground breaking contribution of Engle (1982) to the development of the ARCH type models, the stage was set for a more robust modeling of inflation uncertainty. With this development, a variety of empirical research relating to inflation and inflation uncertainty adopts the conditional variance as proxy to model inflation uncertainty. It is pertinent to note that a reversed causal connection also exit between inflation uncertainties and inflation. This is the view credited to Cukierman and Meltzer (1986). It is the view that higher inflation uncertainty also leads to higher inflation. This position is held in academic literature relating to the subject matter of this research as the Cukierman-Meltzer Hypothesis.

Karahan (2012) investigated the relationship between inflation and inflation uncertainty for Turkey utilizing the two-fold technique involving an ARMA-GARCH model and Granger causality test. This analysis covered the periods from 2002 up until 2012. The empirical conclusion reached for this study supports the Friedman-Ball hypothesis for Turkey.

Berument et.al (2012) adopting a dynamic framework involving a stochastic volatility in mean model for the US data between 1976 and 2007 found that shocks to inflation uncertainty significantly increases inflation. This conclusion matches the aim of their survey which was to study the positive connection between inflation and inflation uncertainty. Neanidis and Savva (2011) had earlier arrived at similar conclusion for some new European Union member countries before their entrance to the union. Their evidences maintained a positive correlation between inflation uncertainty and inflation.

In a study on the dynamic nexus between inflation and inflation uncertainty for a bloc of three countries namely; the US, UK and Japan, Balcilar et.al (2011) also followed the two-fold estimation procedure. Their technique involved a Granger causality examination for both linear and non-linear test. This novel approach provides credible evidence for the Friedman-Ball Hypothesis from the point of view of the GARCH model and the conclusion reached on this basis implied that a high inflation rate for the countries studied amounted to higher inflation uncertainty. This study by Balcilar et.al (2011) find further evidence which maintained a direct positive correlation between inflation uncertainty and inflation up holding the Friedman-Ball and Cukierman-Meltzer Hypothesis jointly.

Hartmann and Herwartz (2012) while using a cross sectional approach to study the causal dynamics of inflation and inflation uncertainty equally found evidences upholding the Friedman-Ball hypothesis. The approach by Hartmann and Herwartz (2012) involved a set of 22 countries and employed the (G)ARCH methodology. They proceeds by conducting the Granger causality test for inflation and inflation uncertainty on the basis of an in-sample and out of-sample technique. The overall findings form this study indicates that the Friedman-Ball hypothesis is more prominent then the Cukierman-Meltzer Hypothesis. This is view that the effect of inflation on inflation uncertainty is evidently more prominent than its causal reverse impact.

Bhar and Mallik (2010) adopting an EGARCH-M model to examine inflation uncertainty and growth uncertainty on inflation as well as output growth for the US found evidence for the Cukierman-Meltzer Hypothesis. This study maintained that inflation uncertainty significantly impact the level of inflation for the US with a significant negative effect on overall output growth level. The empirical relations between inflation and inflation uncertainty for the whole G7 was first examined by Grier and Perry (1998) over a period 1948 to 1993 utilizing the two-fold estimation approach. This study found evidence for the Friedman-Ball hypothesis in all the G7 economies and reports a weak evidence for the Cukierman-Meltzer Hypothesis. In a study for the US, UK and Japan between1962 to 2001, Conrad and Karansos (2005) also found evidence for the Friedman-Ball hypothesis and a mix evidence for the reverse causal correlation.

Furthermore, Fontas and Karanasos (2007) using a monthly data spanning a period from 1957 to 2000 for the G7economies also found that inflation has statistically significant positive impact on inflation uncertainty. Like Grier and Perry (1998), the study by Fontas and Karanasos (2007) reports a mix evidence for the reverse causal impact of inflation uncertainty on inflation for the G7 countries.

In a separate study covering a large observation of UK inflation series (a member of the G7) from 1885 to 1998, Fontas (2001) had earlier found an overwhelming support for the Friedman-Ball hypothesis. Also, Thornton (2008) while examining the relationship between inflation and inflation uncertainty for Argentina from 1810 to 2005 further upheld Friedman-Ball hypothesis. The evidences from Argentina implied that an increase in inflation has a positive association with inflation uncertainty. Elsewhere, Daal et.al (2005) had found evidence for the Friedman-Ball hypothesis in Latin America countries in their study for a crsoss section of developed and emerging countries.

Additionally, Jiranyakul et.al (2009) exploring the connection between inflation and inflation uncertainty for 5 ASEAN economies based on the EGARCH model and Granger Causality up held the Freidman-Ball hypothesis and Cukierman-Meltzer Hypothesis for the ASEAN-5 economies. This study reports a Granger causality results that held that a rise in inflation leads to an increase in inflation uncertainty and higher inflation uncertainty positively impact inflation in all the country in the sample set. A similar conclusion with mixed evidence is also reported by Chen et.al (2007) in their examination of the non-linear linkages between inflation and inflation uncertainty for 4 East Asian economies. They found a significantly overwhelmed evidence for the Friedman-Ball Hypothesis in all but one case for Hong Kong and found a positive proof in support of Cukierman-Meltzer hypothesis.

Form the pool of empirical literature surveyed, not much study has been conducted for Africa on the dynamic relationship between inflation and inflation uncertainty. Consequently, Aboagye and Byekwaso (2005) attempted to bridge this gap in literature in their study on the relations between inflation and inflation uncertainty for 3 Sub-Saharan African countries namely; Senegal, Ghana and Uganda. This study adopted the GARCH model and proceeds on the basis of the two-fold approach. The evidences obtained from the Granger causality test covering the whole sample up held the Freidman-Ball hypothesis for all 3 countries in the sample set. The results of this study also up hold the reverse causal effect of inflation uncertainty on inflation for Senegal alone in the sample set of the countries studied.

Hegerty (2012) also noted this gap in literature as it applies to African and attempt to address this in his investigation on the relationship between inflation and inflation uncertainty for 9 economies in Sub-Saharan African. These countries are; Burkina Faso, Botswana, Cote d'voire, Ethiopia, The Gambia, Kenya, Nigeria and South Africa. This study employed the E-GARCH model with Granger causality and the impulse response functions to examine the causal nexus between inflation and inflation uncertainty. This study maintained that inflation is significantly positively correlated with inflation uncertainty for all the countries in the sample set. An inverse of this effect was found significant for 5 set of countries in the sample.

Suffice to mention here that from the literature surveyed within the context of our research question, no independent study was found to have applied the two-fold estimation procedure for the case of Nigeria alone. This provides further justification for the timeliness of the current study to address this problem.

3 METHODOLOGICAL APPROACHES AND EMPIRICAL DEDUCTION

This paper examines the dynamic causality of inflation and inflation uncertainty in Nigeria from 1995 to 2014. The Nigerian monthly consumer price index is chosen as a proxy for inflation. The data is obtained from the Nigerian Bureau of statistic with the series seasonally unadjusted. The observation covers the periods from 1995M02 to 2015M01. Following Fountas (2001), the inflation series is constructed as the percentage change in the consumer price index. As can be clearly seen form the inflation plot, it is the case that the Nigeria inflation series has been very volatile over the sample period under considerations.

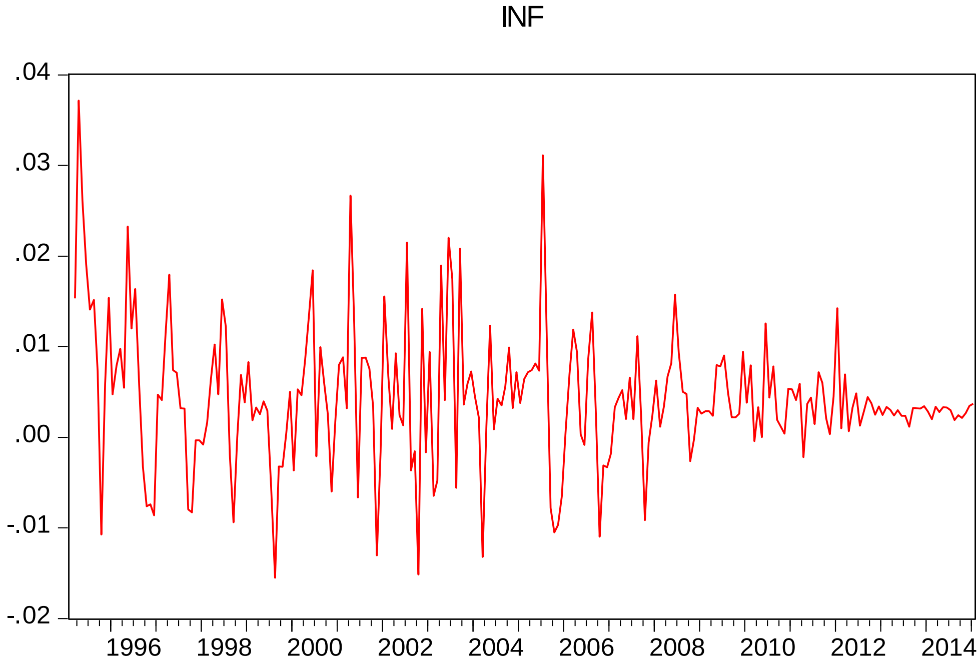

Fig. 1. Plot of Nigeria Inflation series: 1995M02-2015M01.

Table1. Nigeria Inflation summary statistics.

Mean	Median	Maximum	Minimum	Std.Dev	Skewness	Kurtosis	JB
0.004364	0.003412	0.037160	-0.015512	0.007410	0.638358	5.498689	78.40648(0.00)

Table 1 gives the summary statistics of the Nigerian inflation distribution series for the period for the period of our analysis. As can be observed from the Table 1, the Nigerian inflation distribution for the periods spanning 1995M02 to 2014M01 is skewed to the right with fat tails. Thus, the sample skewness for the distribution is asymmetric and the sample kurtosis is an indication that the distribution will be relatively peaked compared to the normal distribution. The extent of skewness and kurtosis from the summary statistics implies a rejection of the normality for the Nigerian inflation distribution. The rejection of the normality assumption as is the case here is further evident by the magnitude of Jarque-Bera statistics with it significant probability value.

Table 2.Unit Root Test.

	Test With-	Statistic	Critical Value1%	Critical Value5%	Critical Value10%	Probability
	Intercept	-10.88523*	-3.457747	-2.873492	-2.573215	
ADF	**Trend&Intercept**	-10.98108*	-3.997083	-3.428819	-3.137851	0.000
	None	-8.911959*	-2.574714	-1.942164	-1.615810	
	Intercept	-10.63899*	-3.457747	-2.873492	-2.573215	
PP	**Trend&Intercept**	-10.64704*	-3.997083	-3.428819	-3.137851	0.000
	None	-8.796819*	-2.574714	-1.942164	-1.615810	
	Intercept	0.267412*	0.739000	0.463000	0.34700	
KPSS	**Trend&Intercept**	0.080459*	0.216000	0.146000	0.119000	

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

The statistic reported in table 2 is a confirmation that the series is indeed stationary as expected since the inflation series is measured as the log of the monthly differenced series of the CPI.

Table3: Q statistic on standard residual and standard squared residual.

Lag Order	Q- *Statistics*	$Q^2 - Statistics$
5	33.5532 (0.0000029)	34.1070(0.0000023)
10	48.1740(0.0000006)	38.7224(0.0000284)
20	112.239(0.0000000)	54.4136(0.0000502)
50	199.500(0.0000000)	79.3451(0.0051568)

Note: Probability Value in Parenthesis.

The significant probability values for the squared residual and standard squared residual at 5% level for all lags implies the rejection of serial correlation for our inflation series.
Following the systematic technique suggested by Box and Jenkins (1976) in Brooks (2008), we proceed by identifying the appropriate model required to capture the dynamism in our inflationary series. This is achieved by utilizing a combination of the correlagram plot and information criteria respectively.

Table 4: Autocorrelation Plot

Lag Order	AC	PAC
1	0.336	0.336
6	-0.150	-0.134
12	0.266	0.150

Result from the correlogram plot.

According to Brook (2008), the coefficient from an autocorrelation plot is considered significant if it fall outside a band of $\pm 1.96 * \frac{1}{\sqrt{T}}$, with T as the number of observation. In the current case, an autocorrelation coefficient is regarded significant if it is bigger than± 0.1268. From the plot, the first autocorrelation coefficient and partial autocorrelation coefficient are highly significant and the case is same for autocorrelation at lag 6 and 12 respectively. Since it is the case that the first autocorrelation coefficient is very significant, the null hypothesis of no serial correlation is rejected for all lags at 1% level of significance. We can infer from this conclusion that a mixed ARMA model is appropriate for our estimation process.
We adopt the information criteria rule to determine the optimal lag order for the estimation of our model. The aim is to select a lag order which yields a minimum value for the information criterion.

3.1 ARMA(r, s) Model

In general, the term ARMA(r, s) is employed to describe a model with autoregressive term in p order and a moving average term in q order. Accordingly the two-fold estimation procedure of Grier and Perry (1998) is followed in building the ARMA-GARCH model to study the dynamics of inflation and inflation uncertainty in Nigeria. Thus, we proceed by estimating the two equations describing the conditional mean (ARMA) and conditional variance (GARCH) of our inflation data. In it general form, the ARMA(r, s) is specified as follows:

$$\pi_t = a + \sum_{i=1}^{r} \emptyset_i \pi_{t-i} + U_t + \sum_{j=1}^{s} \theta_i \epsilon_{t-j} \qquad (1)$$

Where π_t denotes inflation at time t.
The specified equation describes the evolution of an ARMA process with an r autoregressive order and a moving average order of s. It implies that the current inflation value is modeled as a function of its past value captured by the autoregressive term and a past residual value describe in the moving average part of the equation. Our objective in selecting the ARMA process is to allow for the examination of the plausible nature of the model in describing the empirical patterns in our inflation data. Consequently, given the observations from the information criteria, we proceed with the estimation of our model employing only the autoregressive part i.e. AR(1).

Table.5 AR (1) Model Result and Diagnostic Checking for the Inflation series

Mean Equation	**coefficient**	**standard deviation**	**t-statistics**	**Probability**
C	0.004293	0.000681	6.306146	0.0000
AR(1)	0.336141	0.060987	5.511674	0.0000
Model Diagnostics				
Q-statistics	**Q(2)** 0.2692[0.604]	**Q(5)** 2.3972[0.663]	**Q(10)** 10.504[0.311]	
Q-squared Statistics	**Q(2)** 0.9685[0.325]	**Q(5)** 12.094[0.034]	**Q(10)** 25.798[0.004]	
LM Statistics				
ARCH (2)	**F-statistics(2)** (0.0022)	**Chi-squared(2)** (0.0053)		
ARCH (5)	**F-statistics(5)** (0.0060)	**Chi-squared(5)** (0.0067)		
ARCH (10)	**F-statistics(10)** (0.0060)	**Chi-squared(10)** (0.0073)		

The mean model is estimated using an Eviews8©package. The coefficient of the AR model is estimated via a numerical iterative process with convergence reached after 3 iterations. A number of 238 observations were included after adjustment in the estimation process. The estimated AR model is stationary and invertible with an inverted root of 0.34 which is less than one in absolute term. Thus, this satisfies the condition required for stationarity and invertibility of the AR model. The standardized Ljung-Box Q-statistics lead to the rejection of the null hypothesis of no serial correlation in the residual of the AR model. In the same vein, the Q-statistics of the squared residual is insignificant leading to the rejection of no serial correlation for the null hypothesis. The presence of serial correlation in the squared residual and the significant ARCH effect implies that the conditional variance of the inflation series can be appropriately modeled by the GARCH class of models. In other words, the result of ARCH test form lags 2, 5 and 10 confirms the presence of ARCH effect in the squared residual. It is also the case that the F-version of the test as well as the Chi-square probability in all is significant further confirming the presence of serial correlation in the squared residual.

From the diagnostics examinations, we found conclusive evidence that our mean model is free of serial correlation in its residual but not homoscedastic. Thus, the AR model is heteroskedastic. Considering this feature of the data, we proceed with an explanation of the GARCH model and subsequently consider its extension for our empirical modeling.

3.2 The GARCH model

According to Brooks (2008), the GARCH model is credited separately to Bollerslev (1986) and Taylor (1986). This class of models allows us to model the conditional variance of the inflation series as a function of its own past lags in addition to its past square residual. In this case the equation describing the conditional variance is specified as follows:

$$\sigma^2{}_t = a_0 + a_1 u^2{}_{t-1} + \beta\sigma^2{}_{t-1} \quad (2)$$

This is the GARCH (1,1) model. It is regarded as the most basic and robust of the Volatility specification models .The notation $\sigma_t{}^2$ in the equation is the conditional variance used as a proxy for inflation uncertainty. It is defined as a unit-period ahead estimate for the conditional variance obtained from relevant past information. The stationarity condition for the GARCH model requires that the coefficient of the parameters of the model i.e.a_1 *and* β are both positive and less than 1 implying that the model is mean reverting and conditionally heteroskedastic. The positive values of a_1 *and* β is necessary for the conditional variance to be positive. Consequently, the GARCH (1,1) model effectively allow us to model the conditional variance as a function of $a_1 u^2{}_{t-1}$ -which is the ARCH term parameter and $\beta\sigma^2{}_{t-1}$ is the GARCH term parameter. The ARCH parameter measures the sensitivity of the inflation uncertainty to endogenous shocks in the system while the GARCH parameter is a measure of the persistence in the inflation uncertainties regardless of the endogenous shocks in the system. When the ARCH parameter is very high and greater than 10% (0.1), it is then the case that inflation uncertainty is very sensitive to endogenous shocks in the system. Conversely, a significant GARCH parameter greater than 90% (0.9) implies that the uncertainty in inflation is highly persistence and exogenous to endogenous shocks in the system.

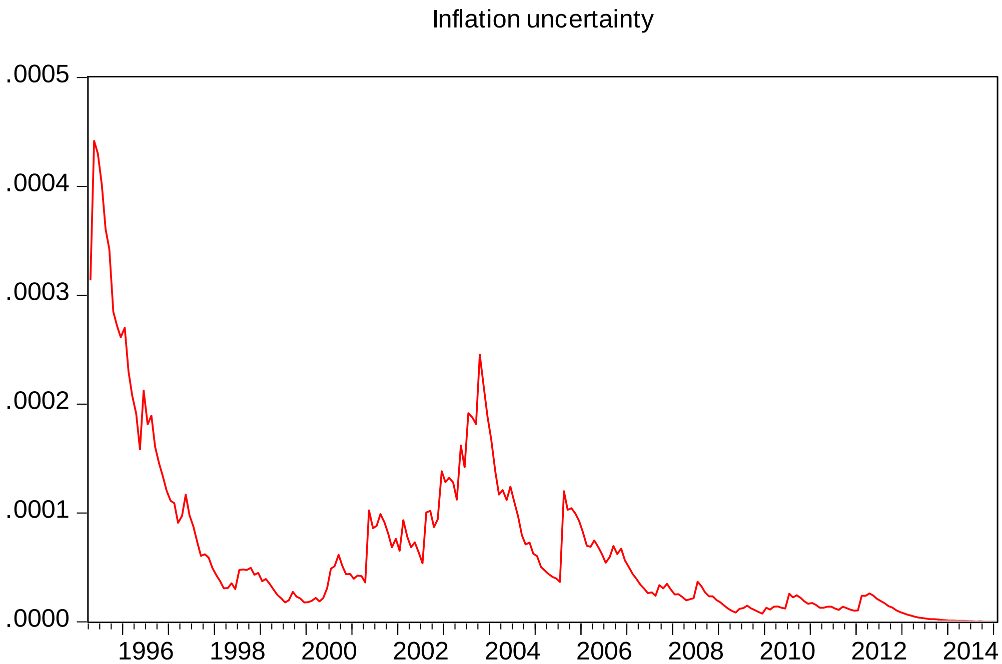

Fig. 2.Plot of conditional variance of inflation.

3.3 An Extension to Exponential GARCH (EGARCH)

The exponential GARCH is proposed to mitigate the draw backs of the basic GARCH model (Brooks, 2008). It is the case that the conditions required for the positivity of the conditional variance may not always hold for high order GARCH model (Malmaten, 2004). This is the requirement that $a_0 > 0$; $a_1 \geq 0$ and $\beta_1 \geq 0$.

3.3.1 The EGARCH (1,1) model

The EGARCH model allows us to avoid imposing an artificial constraint on our estimated model to circumvent non negative coefficients for the parameters of our model. The EGARCH thus makes it possible to detect any asymmetries in our model.
The conditional Variance to be estimated in the EGARCH model is specified as shown below

$$Log({\sigma_t}^2) = \varphi + \beta Log({\sigma_{t-1}}^2) + \gamma \frac{|U_{t-1}|}{\sqrt{{\sigma_{t-1}}^2}} + \alpha \left[\frac{|U_{t-1}|}{\sqrt{{\sigma_{t-1}}^2}} - \sqrt{\frac{2}{\pi}} \right] \quad (3)$$

The conditional variance term is denoted as $Log({\sigma_t}^2)$. The parameters of the conditional variance equation to be estimated are φ, α, β and γ. It is the case for the EGARCH model that even if our estimated parameters are negative, the conditional variance (${\sigma_t}^2$) is sure to be positive (Brook, 2008). In addition to the magnitude of shocks and it persistence as evidenced from the coefficient of ARCH(α) and GARCH(β) parameters respectively, the leverage parameter(γ) tell us about the behavior of our model when a positive or negative shock is introduced in the system. This way the EGARCH model make it possible to test the extent of asymmetries in our conditional variance equation.

Table 6. Estimated EGARCH Model Results for the Inflation Series and Diagnostic Checking

Mean Equation	**coefficient**	**Standard deviation**	**z-statistic**	**probability**
C	0.003227	0.000327	9.868299	0.0000
AR(1)	0.366224	0.075961	4.821211	0.0000
Variance Equation	**coefficient**	**standard deviation**	**z-statistic**	**probability**
φ	-0.138124**	0.067388	-2.049680	0.0404
β	1.00605*	0.007040	142.9100	0.0000
γ	0.082125	0.043890	1.871143	0.0613
$\boldsymbol{\alpha}$	0.235737*	0.038106	6.186257	0.0000
Model Diagnostics				
Q-statistic	Q(2) 0.7009[0.402]	Q(5) 2.5383[0.638]	Q(10) 6.3397[0.705]	
Q-squared statistic	Q(2) 0.1562[0.925]	Q(5) 1.1893[0.946]	Q(10) 3.1083[0.979]	
LM test statistics				
ARCH(2)	F-statistic(2) (0.9328)	Chi-square(2) (0.9320)		
ARCH(5)	F-statistic(5) (0.9527)	Chi-square(5) (0.9509)		
ARCH(10)	F-statistic(10) (0.9799)	Chi-square(2) (0.9780)		

Note: * denote significant at 1% and ** denote significant at 5%

The estimated result from the EGARCH model is presented in Table (6). It is the case from the estimated result that inflation uncertainty in the system is highly sensitive to endogenous shocks given the significant ARCH term parameter ($\boldsymbol{\alpha}$). In term of the persistence of shocks in the system, it is found that uncertainty due to inflation is highly persistence regardless of endogenous shocks. These are attributable to exogenous shocks outside the control of the monetary authority. Thus, we found that the coefficients of the ARCH and GARCH terms are both statistically significant at 1% level. We also found the coefficient of the leverage term to be positive. Although not highly statically significant, it reveals the asymmetry in the model due to inflation uncertainty. It shows that any negative shocks in the system that increases inflation uncertainty will negatively affect the overall levels of output growth in the economics system and slow down economic growth.

Overall, the estimated EGARCH model is stable hence stationary in the mean equation with an inverted autoregressive (AR) root of 0.37.

3.3.2 Granger Causality Test

Following Karahan (2012) and Doğru (2014), we perform the Granger causality test considering inflation and inflation uncertainty for Nigeria in the context of a vector autoregressive (VAR) bivariate model. In this case, the variable of interest is inflation and inflation uncertainty which is the conditional variance of the inflation series. A simple bivariate regression of the following form is specified:

$$\pi_t = \varphi + \sum_{i=1}^{r} \pi_{t-i} + \sum_{j=1}^{r} u\pi_{t-j} + \epsilon_t \quad (4)$$

$$u\pi_t = \varphi + \sum_{i=1}^{r} u\pi_{t-i} + \sum_{j=1}^{r} \pi_{t-j} + U_t \quad (5)$$

Where π_t denote current inflation level, $u\pi_t$ is the current level of inflation uncertainty and the lag period of the causality analysis is represented by r in both equation. The result of the pairwise Granger Causality is presented below;

Table.7 Pairwise Granger-causality

Null hypothesis	**Number of lags**	**Probability**
Inflation uncertainty does not Granger Cause inflation	1	0.7945
Inflation does not Granger Cause inflation uncertainty	1	0.00000002*
Inflation uncertainty does not Granger Cause inflation	2	0.8734
Inflation does not Granger Cause inflation uncertainty	2	0.00001*
Inflation uncertainty does not Granger Cause inflation	5	0.7266
Inflation does not Granger Cause inflation uncertainty	5	0.000001*
Inflation uncertainty does not Granger Cause inflation	10	0.1654
Inflation does not Granger Cause inflation uncertainty	10	0.000002*

* indicate significance at 1%

The pairwise Granger causality result from the table indicates that the null hypothesis that inflation uncertainty does not Granger-cause inflation is not rejected for all lags considered. This is revealed from the statistically insignificant probability levels for lags 1, 2, 5 and 10 considered respectively. Conversely, from the pairwise Granger causality test, the null hypothesis that inflation does not Granger-cause inflation uncertainty is rejected for all lags considered at a very highly statistically significant level of 1%. Thus, our empirical investigation indicates that inflation does Granger cause inflation uncertainty in Nigeria. This empirical conclusion is a confirmation of the Friedman-Ball hypothesis for the case of Nigeria and it is the validation of the claim that an increase in inflation increases inflation uncertainty. Our empirical results have an important implication for the Nigerian apex regulatory monetary authority in its furtherance to achieving a broad inflation targeting regime having committed to this policy direction since 2008. In other words, since the policy of inflation targeting was herald by the Reserve Bank of New Zealand about 3 decades ago, it has become widely accepted across the globe by national central banks that a primary aim of monetary policy should be the stabilization of prices in terms of a stable and low inflation rate. Thus, in the context of the Friedman-Ball hypothesis, Ball (1992) opines that a low inflation rate implies low uncertainties about future inflation rate for private-agents.

4 CONCLUSION

This empirical investigation started off with the primary goal of exploring the dynamic correlation between inflation and inflation uncertainty for the case of Nigeria. It then proceeds in a two-fold estimation technique based on the evidences from a plethora of rich empirical studies in the context of the ARMA-GARCH family of models. To this ends, the EGARCH was adopted as our model of choice due to the asymmetric relationship in our variables of study.
Our estimation covered the periods from 1995 M02 to 2015M01 with a total of 240 observations.
Consequently, following the technique of the two-fold estimation, we proceed by estimating inflation uncertainty as the conditional variance in the EGARCH model. We then perform the dynamic causality test in the context of a pairwise Granger-causality in a bivariate VAR model.
Our empirical conclusion supports the widely researched hypothesis of Friedman (1977) and Ball (1992) jointly referred to as the Friedman-Ball hypothesis.
In terms of policy implication, the evidence from this study is far reaching. It implies that the ambition of a fully fledge inflation targeting regime can be achieved and sustained in Nigeria and a variety of other ambitious emerging economies via optimal fiscal discipline and the institutionalization of a commitment to the stabilization of prices as a key priority in conducting monetary-policy.

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