The Dynamic Role of Interest Rate on the Performance of the Nigerian Economy

Akinpelumi, Omotayo F
Department of Finance and Banking,
University of Port Harcourt, Port Harcourt, Nigeria.
tayofranklin1@yahoo.com

Monogbe, Tunde G
(Corresp.Author)
Department of Finance and Banking,
University of Port Harcourt, Port Harcourt, Nigeria.
olatundebusayo19@gmail.com

Nduka, Joseph A
Department of Banking and Finance
Chukwuemeka Odumegwu Ojukwu University, Anambra state Nigeria
ndukajoseph@yahoo.co.uk

ABSTRACT

Utilizing existent literature as to the subject matter, this research appraised the influx of interest rate volatility on the performance of the Nigerian economy over a period of 1986 to 2014, using auxiliary information followed from the factual report of the Apex Nigerian bank, and using strategies, and utilizing techniques such as Unit root test, Generalized autoregressive conditional heteroscedasticity (GARCH), Impulse-Response Output and Variance-Decomposition Test to evaluate variables such as Interest rate, inflation rate, exchange rate against a sole indicator of economic performance I.e. Gross Domestic Product, it was discovered that despite the short run influx of the spill over volatility of Interest rate and inflation rate, there exist no long run volatility influence of interest rate on economic performance in Nigeria. It was thusly prescribed that the pinnacle money related establishment and applicable strategy creators ought to guarantee a loan fee framework and status that could empower development or generation and the country ought to try to use her interest rate in controlling its yield level as it rouses Gross Domestic Product.

Keywords: Interest rate, Volatility, Inflation rate, exchange Rate, Gross Domestic Product Per capita.

INTRODUCTION

An economy portrays a reverberation of different human traits, which are to a great extent known as "reasonable self-interest" (McConnell and Brue, 2008), who attempt to fulfil their requirements towards self-improvement which has a progressively outstretching influence on their surroundings as Heightened or lower financial execution could be caught by the calculation of the Gross Domestic Output of a country. Rodrik (2009) confirms that financial yield is affected by the level of interest rates of a specific country as Harane and Stephanie (2015) and Udoka and Roland (2012) further acclaimed that an interest rate is a key determinants of monetary execution.

Varying countries are engulfed in the precondition to take off stage, of which Nigeria is a noteworthy player, as she have a powerless business sector and economy vulnerable to monetary incidents in contrast with created or industrialized countries (Central Bank of Nigeria, 2013), the country Nigeria extra time has been strong towards making due as it rose amongst the slag of the 2008 world emergency which connotes a huge development in its financial ability and has subsequent to survived long after the emergency (Central Bank of Nigeria, 2013).

The concept of the interest is one of a kind and pivotal as it speaks to a basic determinant to the development of an economy and impacts variables, for example, reserve funds and speculation conduct of family units and endeavors, and constitute a noteworthy impact toward a countries development and improvement arranges, which asks for more assessment of this key idea, unfortunately, past exercises by open commanding voices in the country (Nigeria) to advance monetary development and improvement by affecting the interest rate has been stealthy, which has accordingly cleared the level of financial advancement of the country far from anyone's regular field of vision and has catalyzed the present poor state of the Nigerian economy.

In this way, varying nations in different phases of development have conveyed different exercises towards the reorganization of their interest rates and their general monetary framework, such activities connotes a financial counter towards killing unfavourable restrictions militating against money related framework. Some of these exercises involve the "expulsion of loan fee roof and relaxing of store and credit controls and organization of the independent remote trade market" (Killick and Martin, 1960). In the right on time by of the 1980s, Nigeria has seen the boring throbs of the monetary gloom which showed in the types of low speculations emerging from the unbending loan fee controls additionally combined with a tight economy coming about because of deficient subsidizes and served as an impetus

to powerless money related extending, diligent financial weight combined with waning dark gold costs in the outside business sector and a wide outer obligation came to pass for the country, it in this manner gets to be relevant to know the impact of the interest rate stuns and instability on monetary execution in the country (Imosi et al, 2012).

It has been noticed that notwithstanding current financial matters substances in Nigeria there has been not very many level of development proportionately to the existent interest rate. Further to the commitment of observational examinations on swapping scale, loan fee and their impact on efficiency, confirm flourish on insightful audited that there is solid proof that interest rate activated idealistic monetary execution in Belgium, especially inside the old fashioned of 1873 and 1935. Be that as it may, the approach ramifications of these remote proof may not be pertinent to Nigeria, subsequently the requirement for a more present Nigeria study.

In spite of every one of these statements, there are still requirements for the proof from Nigeria to be very much reported keeping in mind the end goal to learn whether the country has achieved it named full scale financial development targets. Subsequently, a shortage of experimental writing on conversion scale and interest rate abilities in the arrangement of liquidity for cultivated financial execution need in Nigeria.

This study therefore rests on the wide premise that given the raging controversy on the theoretical and empirical association between interest rate shocks/volatility on the economic performance of Nigeria utilizing further components of interest rate which loops into inflation rate and exchange rate and ploughing the gross domestic product of the nation as a key performance measure towards deriving a single unit of measurement amongst employed variables Having presented an overview as above, the rest of the study is divided into four distinct sections. The second fragment boons the theoretical framework and literature review. Section three discusses the methodology, while the results and analysis will be presented in section four. The fifth fragment presents the study's discussions, conclusions and policy recommendations.

Theoretical Framework and Literature Review

To guarantee a liquid work, this fragment is talked about under the accompanying inscriptions.

Theoretical Framework

Theories of Interest Rate

Various hypotheses exist on loan fee set up together give variable which decide interest rate. These hypotheses veer because of the characteristic distinction of academic standpoint with regards to the position of interest rates whether they are genuine or money related events:

The Classical Theory of Interest Rate

There is clarity with regards to the noteworthiness put on loan fee, since it is viewed as a prime component that passes on the interest of speculation and the eagerness to spare into harmony with each other. Ventures speak to the solicitation for investable capital and reserve funds speak to the supply, while the interest rate otherwise called the charge of capital is the "costs" of investable assets of which they are compared. Pretty much as the cost of a product is vital settled at the point where the interest for it is equivalent to the supply, so the rate of the premium essentially stops under the play of business sector power at the point where the measure of speculation at the rate of interest is equivalent to the measure of sparing at the rate.

The Keynesian Liquidity Preference Theory of Interest Rate

Interest rate is seen by Keynes as a modestly fiscal idea or wonder, as in the rate of premium is controlled by the association of interest and supply of cash. The interest for liquidity together with the supply of cash decides the loan fee. Interest is the prize paid for paid for separating with liquidity. The interest for cash, as indicated by Keynes, is in this manner interest to hold cash money equalizations. In this way, there are three intentions which lead to liquidity inclination: (1) the exchange thought process, (2) the theoretical rationale, (3) the preparatory rationale. In the liquidity capacity, it is proposed by Keynes that the interest for cash is contrarily associated with the rate of premium, an ascent in the rate of premium diminishes the interest for cash or, as it were, an expansion in the interest for cash prompts an ascent in the rate of premium, and the other way around. The Theory further satiates that any adjustment in the liquidity preference capacities (LP) or change in cash supply or change in both individually cause changes in the rate of premium.

The Loanable Funds Theory Interest Rate

In line with this theory, "the rate of interest is calculated on the basis of demand and supply of loanable founds present in the capital market. This is an idea figured by Kunt Wicksell, the understood Swedish financial expert. The loanable discovered Theory of interest rate pushed that both sparing and speculation are in charge of the determination of interest rate over the long haul. Then again, fleeting interests are figured on the premise of the monetary states of a specific economy. The determination of the interest rate on account of the loanable establishes. Theory of the rate of interest depends basically on the accessibility of advance sums. As per the loanable establishes Theory of interest rate, the ostensible interest rate is dictated by the connection between the interest and supply of loanable establishes. Keeping the same level of supply, an expansion in the interest for loanable establishes would prompt an increment in the rate of interest and the other way around is valid. On the other hand, an expansion in the supply of loanable establishes would bring about a diminishing in the rate of interest. In the event that both the interest and supply of the loanable establishes change; the resultant rate would depend much on the size and course of development of the interest and supply for the loanable establishes.

Irving Fisher's Theory of Interest Rate

Irving fisher's interest rates theory places that the ostensible interest is to the rate of expansion and the genuine interest rate r. The genuine interest r is the loan fee after modification for inflation. It is the interest rate that lenders must be willing to advance out their establishes.

Interest Rates

Utilizing the economist approach, interest rate can be disclosed to be the quality that is picked up in the exertion of a worth that has been spared or contributed. These rates will mirror the collaboration between trades of cash" (Patterson dan Lygnerud, 1999). There is a presence of short and long haul interest rates incongruities in accordance with to Patterson dan Lygnerud (1999). Fleeting rates is impacted by the Central Bank, in this way cash is being consumed as needs be. In long haul rates in any case, demonstrates the state of the present economy and the likelihood of expansion. Both of the rates are connected and work with each other. As per Certified Public Accountant (CPA) Australia there are two methods for measuring the dangers of loan fees, they are: affectability examination and re-pricing profiles.

Inflation

Inflation can be effectively assigned as a tenacious increment in cost as general, where expansion diminishes buying power from a coin (McConnel and Brue, 2008). There exist a modest bunch of wellsprings of expansion where total interest increments speedier than total supply, accordingly expanding the expense of merchandise and administrations. The awkwardness of total request and supply is connected to the administration's shortage, development of bank's loan fees and the expansion of remote interest (Haberler, 1960). Expansion comparably upsurges the cost of products and the cost of work subsequently the expense of merchandise and offering cost expands (Sukimo, 2000). Expansion have rare markers, for example, Buyer Price Index (CPI), Wholesale Price Index (WPI), and Implicit Price Index (deflator GDP) (Majalah Tempo, 2002).

Exchange Rates

Exchange rate can be disclosed to be a worth that a currency has contrasted with another currency (Krugman, 2001). Tiwari (2003) expressed that swapping scale can be isolated into two classes, altered conversion scale and adaptable swapping scale. In a settled swapping scale, it is set by the administration, though adaptable conversion standard is set by the business sector with or without the impact of the legislature in the push to balance out the money related. (Kuncoro, 2001).

The relationship between interest rates and Gross Domestic Product

Viewing through the Output point, Udoka and Roland (2012) affirms that interest rates is a vital components demonstrating hopeful monetary execution of a country, however an expansion in interest rates likewise demonstrates a contracting GDP. The uplifting news is that their exploration demonstrates that loan fees don't have a critical effect in hopeful monetary execution. An expansion in loan fees will bring about an abatement in genuine development rates, this examination however is done in Europe. (Giovanni et al., 2009).

Empirical Literature

Ahmed et al. (2010) analyzed the relationship between the Pakistani stock costs, the Pakistani interest rate and the adjustment in the Pakistara: merest rates. They disclose a noteworthy impact for the loan fee on the share trading system, and an imperceptibly critical impact of the adjustment in interest rates on the share trading system.

Tian and Ma (2010) using a longitudinal information set for Johannsen co-reconciliation, "between the Shanghai steak market and the Chinese genuine interest rates against the US dollar and the Hong Kong dollar, cash supply, shopper value list, and mechanical creation record. They discover backing to the stream way to deal with the value markets. An irritating component of their outcome is that a 1% change in the renminbi against the US dollar causes a 32% long run change in the Shanghai securities exchange record, while a 1% change in the renminbi against the Hong Kong dollar causes a 38% change in money markets. These response sizes are too high to possibly be conceivable.

Inci and Lee (2011) research the relationship amongst stock returns and interest rate changes for eight created countries. Slacked interest rates are found to affect stock returns. However, Granger causality is bidirectional in the two markets. The dynamic affiliation is huger and more grounded as of late of recessionary experience in respect to earlier years of extension. Parsva and Lean (2011) assessed the relationship amongst loan fees and the stock exchange for six Middle Eastern nations. Their information set is month to month from January 2004 to September 2010. They incorporate into their relapses the interest rate, the swelling rate, and oil costs. They test for co-joining among the variables and they embrace Granger causality tests. Their outcomes bolster co-coordination, which may bring about consistency of benefit costs. Three nations have bidirectional relationship between interest rates and stock costs in both the short run and in the long nm. In one nation the interest rate Granger causes the share trading system in both the short run and over the long haul. A two-way long run linkage for the staying two nations exists for the same affiliation.

Anlas (2012) did am assessment of stock costs and loan fees from the point of view of Turkey the relapses in first-contrasts incorporate a model for the contingent difference. In this paper the same strategy for the contingent difference is adjusted. The contingent mean condition incorporates different variables like cash supply, swelling, and oil costs. The conventional methodology is bolstered for two monetary standards, and the portfolio equalization methodology is upheld for the third coin. Kollias et al. (2012) used yearly dataset and explored the security between the euro-dollar rate and two European stock exchange records. They embrace moving co-combination tests and moving Granger-causality tests. No-co-incorporation neglects to be rejected. They find that, under typical conditions, the interest rate drives money markets, while, in distressing circumstances, the converse causality holds.

Haker and Halemi (2004), take after the GDP capacity methodology of Mordi (2006), which permits adequate adaptability as far as practical structures to give assessments of import request and fare supply flexibility in 117 nations. Designs found in the evaluated versatilities are talked about and the appraisals and their standard blunders can be down stacked from a partner document. The arrangement suggestions drawn from this study are in this manner critical in perspective of their commitments to educated basic leadership in Nigeria and other people who have the same financial structure. Antonia (2008), examined the relationship amongst genuine viable interest rate and total parity of exchange for major fluctuating economies "after the accident of Bretton Woods. Utilizing a grouping of parametric and non-parametric techniques, the outcomes recommend that there is little confirmation that the conversion standard fundamentally influences the equalization of exchange (BOT).

Bahmaniet (2008) utilizing VECM evaluated the advanced impact of swapping scale Devaluation on Balance of exchange South Africa. The outcomes give proof supporting the perspective that degrading of the conversion scale declines the Balance of exchange of South Africa in the closest future. Odusola (2006) connected co-incorporation and mistake adjustment model methodologies examined the responses of Indian cumulative import request amid the period 1971-1995. The outcomes acquired show that import volume is co incorporated with relative import cost and genuine GDP. The yield of the econometric model evaluation demonstrates that import request in India is to a great extent clarified by genuine GDP and by and large less delicate to import value changes.

Additionally, Obadan (2006) practicalised with the VECM to test for Marshall-Lerner condition in the swapping scale equalizations relationship in the Baltic States. The condition is observed to be met for Lithuania, however not for Estonia, while the outcomes concerning Latria are vague. Despite the fact that the customary influencers are adequate at clarifying exchange elements in Baltic nations, the examination uncovers that a long-run balance relationship among them exists.

MATERIALS AND METHODS

For purpose of lucidity, this section is further divided into subsections as presented below:

Research Design

The design used in this exploration is the Ex-post facto which is an Ex-Post Facto research outline which is a previous variables are coordinated on the Criterion variable and the variables information are recorded or going before occasions.

Model Specification

This study construct and utilized a single interest rate/ exchange rate – economic growth model with two predictor variables linearly in the functional form as follows:

Functional form

GDPC = *f* (INT, INF, EXCR) ---------- (1)

Where:

GDPC = Gross Domestic Product Per capita
INT = Interest rate:
INF = Inflation rate
EXCR = Exchange rate

This can be mathematically written as:

$GDPC = \beta_o + \beta_1 INT + \beta_2 INF + \beta_3 EXCR + \mu_i$ ---------- (2)

Where:

GDPC = Gross Domestic Product Per capita
INT = Interest rate:
INF = Inflation rate
EXCR = Exchange rate
β_0 = Constant Parameter
$\beta_1, \beta_2, \beta_3$ = Estimation parameters
μ = Error terms

Operational Definition of variables

Interest rate: The rate of interest is the price of the fund. It is the reward paid to the fund owner for parting with liquidity.

Inflation rate: Inflation is defined "as a sustained increase in the general level of prices for goods and services. It is measured as an annual percentage increase".

Exchange rate: This is conceptualized as "the price of one unit of foreign currency in terms of domestic currency".

Gross Domestic Product Per capita: is conceptualized as the aggregate pecuniary worth of all economic output in an economy over a defined period of time, usually one year divided by aggregate population.

Model Estimation Techniques

To investigate the nature of the volatility of the interest rate and intervening variables on economic performance, the following tools have to be utilized.

Stationarity Tests:

The stationarity of series is important to assess unit root traits of the time arrangement. As needs be, the Augmented Dickey Fuller (ADF) test is utilized. The choice is to dismiss the invalid speculations "if the ADF test measurements is totally higher than the Mackinnons Critical Values at 1%, 5% and 10% levels of centrality" (Brooks, 2009).

Generalized autoregressive conditional heteroscedasticity (GARCH) : This is a Process is an econometric term set up in 1982 by Robert F. Engle: It is normally demonstrate as takes after:

$Var(yt|yt-1,\ldots,yt-m)=\sigma 2t=\alpha 0+\alpha 1y2t-1+\cdots+\alpha my2t-m.$

Decision Rule: y_t is white noise when $0 \leq \alpha_1 \leq 1$.

Impulse Response: refers to the reaction of any dynamic framework because of some outer change. In both cases, the motivation reaction portrays the response of the framework as a component of time.

$y_t = y^s + Ay^h_{t-1} + Bu_t$

Variance Decomposition: The variance decomposition assigns the measure of data every variable adds to alternate variables in the autoregression. It decides the amount of the estimate blunder difference of each of the variables can be disclosed by exogenous stuns to alternate variables. It is usually model as follows:

$y_t=v+A_1y_{t-1}+\ldots+A_p\,y_{t-p}+u_t$

Data Presentation

Data for this study consist of end of year values of gross domestic product per capita (GDPC) being a ratio of Nigeria's Gross Domestic product to its population, Interest rate, Inflation rate and Exchange Rate They cover the period of 1986 t0 2014 (29 years). The data set is presented in table 1 below:

Table 1: Gross Domestic Product (GDPC), Interest rate (INT), Inflation rate (INF) and Exchange rate (EXCR): 1986 – 2014.

Year	GDPC	INT	INF	EXCR
1986	42187.77	10.5	13.7	2.02
1987	36583.81	17.5	9.7	4.02
1988	38218.17	16.5	61.2	4.54
1989	39528.87	26.8	44.7	7.39
1990	43315.58	25.5	3.6	8.04
1991	41844.96	20.01	23	9.91
1992	40900.54	29.8	48.8	17.3
1993	40636.85	18.32	61.3	22.05
1994	39907.96	21	76.8	21.89
1995	38719.38	20.18	51.6	21.89
1996	39563.79	19.74	14.3	21.89
1997	39582.83	13.54	10.2	21.89
1998	39568.51	18.29	11.9	21.89
1999	38691.06	21.32	0.2	92.69
2000	39657.00	17.98	14.5	102.11
2001	41745.54	18.29	16.5	111.94
2002	49230.81	24.85	12.2	120.97
2003	52863.8	20.71	23.8	129.36
2004	56893.28	19.18	10	133.5
2005	58354.86	17.95	11.6	132.15
2006	60318.82	17.26	8.5	128.65
2007	62797.15	16.94	6.6	125.83
2008	64773.45	15.14	15.1	118.57
2009	67427.29	18.99	13.9	148.88
2010	70856.78	17.59	11.8	150.3
2011	73918.82	16.02	10.3	153.86
2012	77059.98	16.79	12	157.5
2013	79926.62	16.72	8	157.31
2014	82838.88	16.55	8	158.55

Sources: *Central Bank of Nigeria, Statistical Bulletin (Various Issues).*

Presentation of Results

Presentation of Stationarity (Unit Root) Test Results:

The results of the stationarity tests for all the study variables are presented in table 2 below:

Table 2: Results of Stationarity (Unit Root) test:

Variable	ADF t-statistics	Critical Value 5%			Order of Integration	Prob.
		1%	5%	10%		
D(GDPC)	-4.245546	-3.699871	-2.976263	-2.627420	I(1)	0.0027
D(INT)	-5.265541	-3.711457	-2.981038	-2.629906	I(1)	0.0002
D(INF)	-4.540346	-3.737853	-2.991878	-2.635542	I(1)	0.0016
D(EXCR)	-5.003174	-3.699871	-2.976263	-2.627420	I(1)	0.0004

Note: D(GDPC), D(INT), D(INF), and D(EXCR) represent the differenced values of The Gross Domestic Product Per Capita (GDPC), Interest Rate (INT), Inflation Rate (INF), Exchange Rate (EXCR) and Globalization Index (GLBI) respectively.

Source: *Authors Computations using E-Views 9.*

Going by the decision rule above, it could be observed that all variables are stationary at their first difference (1), as the absolute values of their ADF test statistics are all higher than their respective MacKinnon's critical values at 1%, 5% and 10% respectively.

Generalized autoregressive conditional heteroscedasticity (GARCH)

The study intends to test for the influence of shocks of the predictors on the criterion variables:

Table 3: Results of Volatility test (GARCH):

Criterion Variable: GDPC
Methods: ML ARCH - Normal distribution (BFGS / Marquardt steps)
Sample: 1986 2014
Number of observations: 29
Convergence achieved after 35 iterations
Coefficient covariance computed using outer product of gradients
Presample variance: backcast (parameter = 0.7)
*GARCH = C(4) + C(5)*RESID(-1)^2 + C(6)*GARCH(-1)*

Variable	*Coefficient*	*Std. Error*	*z-Statistic*	*Prob.*
INT	*1285.467*	*121.6754*	*10.56473*	*0.0000*
INF	*118.9682*	*120.2657*	*0.989211*	*0.3226*
EXCR	*313.1776*	*21.98631*	*14.24421*	*0.0000*
		Variance Equation		
C	*25776758*	*37742870*	*0.682957*	*0.4946*
RESID(-1)^2	*0.881661*	*0.886844*	*0.994155*	*0.3201*
GARCH(-1)	*-0.020071*	*0.385705*	*-0.052037*	*0.9585*
R-squared	*0.405484*	*Mean dependent var*		*51652.18*
Adjusted R-squared	*0.359752*	*S.D. dependent var*		*14858.87*
Log likelihood	*-306.4043*	*Hannan-Quinn criter.*		*21.63372*
Durbin-Watson stat	*0.583159*			

Source: *Authors Computations using E-Views 9.*

The above output shows that despite the shortrun spill over influx of Interest Rate and exchange rate on Gross Domestic Output Per Capita based on the probability level of 0.0000 and 0.0000 respectively, there is an absence of

long run association between the interest rate and its moderators on economic performance as denoted by Gross Domestic Output Per capita (GDPC) as the Differentiated GARCH model shows a negative (-0.020071) but insignificant (0.9585 > 0.05) influx of the volatility of The interest rate and its components on economic performance in Nigeria and shows that the volatility of the predictor variables only account for 40.5% of variation in the Criterion variable (GDPC).

Impulse Response evaluation

Table 4: Impulse Response Output

Response of GDPC:

Period	*EXCR*	*GDPC*	*INF*	*INT*
1	*-364.4269*	*1490.859*	*0.000000*	*0.000000*
	(291.170)	*(202.880)*	*(0.00000)*	*(0.00000)*
2	*-130.0036*	*1543.853*	*151.0596*	*86.74674*
	(451.685)	*(357.991)*	*(272.713)*	*(266.516)*
3	*338.9053*	*1078.252*	*395.7325*	*-313.5640*
	(433.392)	*(420.866)*	*(393.918)*	*(339.386)*
4	*1018.138*	*867.0875*	*76.75243*	*-308.0409*
	(452.124)	*(419.355)*	*(395.495)*	*(373.029)*
5	*1507.346*	*846.9023*	*-118.5691*	*-447.2639*
	(542.299)	*(439.048)*	*(377.918)*	*(377.063)*
6	*1938.085*	*722.0247*	*-260.1821*	*-603.5763*
	(650.371)	*(501.713)*	*(420.312)*	*(441.607)*
7	*2367.378*	*494.5219*	*-328.5266*	*-814.7245*
	(777.732)	*(598.232)*	*(503.540)*	*(537.191)*
8	*2808.180*	*264.3530*	*-410.6982*	*-969.2698*
	(933.463)	*(702.871)*	*(574.524)*	*(640.556)*
9	*3213.577*	*68.83082*	*-482.7888*	*-1101.571*
	(1112.91)	*(818.655)*	*(654.113)*	*(747.663)*
10	*3579.724*	*-104.8135*	*-563.5326*	*-1211.238*
	(1313.90)	*(944.198)*	*(745.458)*	*(851.644)*

Source: Authors Computations using E-Views 9.

In the short run, only exchange rate demonstrated a negative impulse to Gross Domestic Product per capita, while other impulse were positive even the self-impulse from the criterion variable, but in the long run, all variables develop larger impulses and switch roles as exchange rate switched to more positive impulses while interest rate and inflation had negative impulses, as a response to the varying impulses, the Gross Domestic Product which started on a positive note headed towards a h=negative response, i.e. the mild behaviour of all predictor variables led to a negative response from economic performance as denoted by Gross Domestic Product

Variance Decomposition evaluations

Table 5: Variance Decomposition Output:

Period	*S.E.*	*EXCR*	*GDPC*	*INF*	*INT*
1	*15.51808*	*5.638243*	*94.36176*	*0.000000*	*0.000000*
2	*20.67303*	*3.127911*	*96.23810*	*0.476768*	*0.157223*
3	*25.18916*	*4.187074*	*91.29815*	*2.839602*	*1.675170*
4	*29.92130*	*15.85278*	*79.44378*	*2.257773*	*2.445671*
5	*34.13632*	*31.31345*	*63.42724*	*1.747157*	*3.512156*
6	*38.18889*	*45.46582*	*48.13155*	*1.656668*	*4.745966*
7	*42.12229*	*56.87363*	*35.19436*	*1.648956*	*6.283059*
8	*45.71756*	*65.45990*	*25.38438*	*1.709364*	*7.446360*
9	*48.93156*	*71.46437*	*18.53521*	*1.782212*	*8.218207*
10	*51.85678*	*75.54285*	*13.90066*	*1.880481*	*8.676007*
	Cholesky Ordering: EXCR GDPC INF INT				

Source: *Authors Computations using E-Views 9.*

In summary of the above variance decomposition, it can be seen that Interest rate and inflation rate had little to no form of variation over time in the short and long run, but exchange rate had an heightened form of movement, all these behaviours cumulated in a drastic decrement in the behaviour of the performance of the economy i.e. Gross Domestic Product as it dropped from 94% in the short run to 13% in the long run which also owns to self-shock/ own shock.

Summary of Findings:

The above therefore seeks to explain that despite interest rate and inflation rate short run influence on economic performance by their level of independent volatility, they lack long run influence on economic performance except exchange rate which displays a great degree of long and short run influence on economic performance as proxied by Gross Domestic Product Per Capita.

DISCUSSION, CONCLUSIONS AND POLICY RECOMMENDATION

The study evaluated the influence of interest rate volatility on the performance of the Nigerian economy over the timeframe of 1986 to 2014, utilizing secondary data tracked from the statistical reports of the Apex Bank in Nigeria, and utilizing techniques such as Unit root test, Generalized autoregressive conditional heteroscedasticity (GARCH), Impulse Response Output and Variance Decomposition Test to evaluate variables such as Interest rate, inflation rate, exchange rate against a sole indicator of economic performance I,e Gross Domestic Product, it was discovered that despite the short run influx of the spill over volatility of Interest rate and inflation rate, there exist no long run volatility influence of interest rate on economic performance in the nation. The results might probably be attributed to the following factors which prevail significantly in Nigeria;

i. The interest rate and inflation rate are homogenous in nature.
ii. There exist other factors not captured in the study that might be driving the economic performance rate (Gross Domestic Product)
iii. The prevalence of parallel market for foreign exchange in Nigeria which significantly distorts prices, economic planning and monetary policy management in Nigeria.

In the light of these issues raised above, it is recommended that.

- The apex financial institution and relevant public authorities should ensure an interest rate system and status that could stimulate growth or production.

- The nation should endeavour to utilize her interest rate in controlling its output level as it motivates Gross Domestic Output.
- The Monetary Policy Rate should be adequately reviewed to stem the excesses of inlation in the nation.

REFERENCES

Banerjee, Prashanta K. & Adhikary, Bishnu Kumar. (2009). Dynamic effects of changes in interest rates and exchange rates on the stock market return in Bangladesh.

Bank of Ghana. (2003). Annual Reports., Acera, Ghana Chhibber .A, Cottani J., Firuzabadi, D and Walton, M. (1989): Inflation, Price Controls

Barbakadze, Ivane. (2008). Explaining inflation in Georgia: Do exchange rates and nominal wages matter? Tbilisi

Baridam, D. M. (2001): Research methods in Administrative Sciences, 3 Edition, University of Port Harcourt, Sherbrooke Associates Press

Baridam, D.M. (2008): *Research Methods in Administrative Sciences*, Port Harcourt, Sherbrook's Associates.

Barro, R. J., Gordon, D.B. (1983): Rules, discretion, and reputation in a model of monetary policy, Journal of Monetary Economics, 12, 101-120

Barro, Robert J. (1995). Inflation and economic growth. National Bureau of Economics Research.

Bernanke, Ben S. & Kuttner, Kenneth N, (2003). What Explain the Stock Market's Reaction to Federal Reserve Policy. Federal Reserve Government.

Bernhardsen, T., Hoimsen, A. (2005): The choice of exchange rate assumption in the process of forecasting inflation, Staff Memo, 3, Central Bank of Norway.

Berument, H. and Pasaogullari, M. (2003): Effects of the real exchange rate on output and inflation: evidence from Turkey, The Developing Economies.

Berument, Hakan & Gunay, Asli. (2003). Exchange rate risk and interest rate: A case study for Turkey. Open economies review. KluwerAcademic Publishers.

Bleaney, M. (2001): Exchange Rate Regimes and Inflation Persistence, IMF Staff Papers, 47(3)

Bleaney, M. & Fielding, D. (2002): Exchange rate regimes, inflation and output volatility in developing countries, Journal of development economics, v. 68, pp. 233-245

Calvo, G. and Reinhart, C. (2000a): Fear of Floating, NBER, working paper no. 7993.

Calvo, G. and Reinhart, C. (2000b): Fixing for your life, NBER, working paper no. 8006.

Canetti, E. and Greene, J. (2000): Monetary Growth and Exchange Rate Depreciation as Causes of Inflation in African Countries, International Monetary Fund Washington, D.C., World Bank Working Paper.

Central Bank of Nigeria Quarterly Statistical Bulletin Volume Central Bank of Nigeria: Economic and Financial review. June 2006 published 7/5/2007 .Vol.44.

Chen, N. (2004): The behaviour of relative prices in the European Union: A sectoral analysis, European Economic Review, 48, pp.

Chibber, A., Shafik,N. (1989): Exchange Reform, Parallel Markets and Inflation in Africa: The Case of Ghana, World Bank Working Paper, WPS 427, World Bank, Washington DC.

Clemens, J.M.K., Alex, L. (2002): Inflation Persistence under Semi-Fixed Exchange Rate Regimes: The European Evidence, 1974-1998.

Demirguch, Kunt A., & R. Levine. (1996). Stock market development and financial intermediaries: Stylized Facts. *The World Bank Economic Review*.

Devereux, M.B.; Engel, C. (2002): Exchange rate pass-through, exchange rate volatility and exchange rate disconnect, Journal of Monetary Economics, 49, pp. 913-940

Dick, D. and Njuguna, S.N. (1998): A Dynamic Model of Inflation for Kenya 1974-1996, Working Papers in Economics, vol. 7.

Dickey D. A., Wayne, A. F. (1979): Distribution of the Estimators for Autoregressive Time Series with a Root, Journal of the American Statistical Association, 74, 427-431.

Dixit, A. (1989): Hysteresis, Import Penetration, and Exchange Rate Pass- Through. Quarterly Journal of Economics, Vol. CIV, No.2 (May) 205-227.

Dornbusch, R. & Fischer, S. (1980). Exchange rates and the current account. *American Economic Review.*

Drazen, A. (2000): Political Economy in Macroeconomics, Princeton, The Princeton University Press.

Duarte, M.; Stockrnan, A.C. (2002): Comment on Exchange rate pass- through, exchange rate volatility, and exchange rate disconnect, Journal of Monetary Economics, vol. 49, n. 5, July, 94 1-946

Elbadawi, I. A. (1990): inflationary Process, Stabilization and the Role of Public Expenditure in Uganda, Washington, D.C., World Bank Working Paper.

Ersan, Eda. (2008). International Fisher Effect: A reexamination within the co-intergration and dsur frameworks. Middle East Technical University.

Fisher, I., (1930). The Theory of Interest. New York: Macmillan.

Flood, R.P.; Rose, A. K. (1995): Fixing exchange rates — a virtual quest for fundamentals, Journal of Monetary Economics, 36, pp. 3 — 37

Friedman, M. (1972): Have Monetary Policies Failed? American Economic Review, Papers and Proceedings, 62(2), 11-18.

Ghazali, Noor A. (2003). A long money test of the long-run fisher effect in the G7 Countries. Applied Financial Economics.

Ghosh, A., Guide, A. and Ostry, J. (1997): Does Nominal Exchange Regime Matter? NBER Working Paper, 5874

Goeltom, Miranda S. 2007. The Nigeria experience. Gramedia Pustaka Utama.

Goodfriend, M. S. (1997): A Framework for the Analysis of Moderate Inflations, Elsevier, Elsevier, The Journal of Monetary Economics, 39(1), P 45-66.

Greene, J., Canetti, E. (1991): Monetary Growth and Exchange Rate Depreciations as Causes of Inflation in African Countries: An Empirical Analysis. Mimeo, IMF, Washington.

Gujarati D, (1995): Basic Econometrics, Third Edition. McGraw-Hill International Educational Editions, New York.

Haberler, Gottfried. (1960). Inflation its cause and cures. The American Enterprise Association.

Hakkio & Craig S. (1986). Interest rates and exchange rates – what is the relationship? Federal Reserve Bank of Kansas City.

Hamarita, Mohamed Essaied., Trifi & Abdelkader. (2011). The relationship between interest rate, exchange rate and stock price: A wavelet analysis. *International Journal of Economics and Financial Issues.*

Hashim, I. A. and Zarma, A. B. (1996): The impact of parallel market on the stability of Exchange Rate: Evidence from Nigeria; NDIC Quarterly Vol. 7 No
Hassyati, Atika Nashirah. (2013). Analisis exchange market pressure di Nigeria dengan pendekatan vector autoregressive (VAR). Universitas Dipenogoro.
Holod, D. (2000): The Relationship between Price Level, Money Supply and Exchange Rate in Ukraine , A thesis submitted to the National University of Kiev-Mohyla Academy
Honohan, P. Lane, P.R. (2004): Exchange Rates and Inflation in EMU:
http://www.cenbank.org/ documents! Statbulietin. As
Huizinga & Mishkin. (1984). Inflation and real interest rates on assets with different risk characteristics. *Journal of Finance.*
Hyder, Z. and Shah, S. (2004): Exchange rate pass-through to domestic price in Pakistan, Working paper, 5, State Bank of Pakistan.
Irving, Fisher. 1930. The theory of interest. Augustus M. Kelley Publisher.
Isard, P. (2007): Equilibrium Exchange Rates: Assessment Methodologies IMF Working paper WP/07/296
Ito, Takatoshi., Isard, Peter. & Symansky, Steven. (1999). Changes in Exchange Rates in
Jhingan, M.L. (2002). Micro Economic Theory. Vrinda Publications Ltd., New Delhi.
Johansen, 5. (1991). Estimation and Theory Testing of cointegration Vector
Johansen, S. (1988): Statistical Analysis of Cointegration Vectors, Journal of Economic Dynamics and Control, 23 1-254.
Jordaan. J. C. (2013). Impact of interest rate changes on South African GDP and households: a combined macroeconomic and social accounting matrix modelling approach. Southern African Business Review.
Kajian Ekonomi dan Keuangan, Departemen Keuangan RI.
Kamin, S. B. A. (1997): Multi-Country Comparison of the Linkages between Inflation and Exchange Rate Competitiveness, BIS Working Papers, 45.
Kandel, Shmuan., Ofer, Aharon R. & Sarig Oded. (1996). Real interest rates and inflation: An ex-ante empirical analysis. *The Journal of Finance.*
Keynes, J. M. (1936.): The General Theory of Employment, Interest, and Money, London, Macmillan Publication.
Killick, T., & Martin, M. (1990). Financial policies in the adaptive economy.
King, R. G. (1992): The New IS-LM Model: Language, Logic, and Limits, Richmond, The Federal Reserve Bank of Richmond, Economic Quarterly Jo urnal, 86(3), P 45—10
King, R. G., & Levine, R. (1993). Finance and growth: Schumpeter might be right. Quarterly *Journal of Economics.*
Krugman, p. (1986): Exchange Rate Instability Paper presented in the Massachusetts institute of Technology
Krugman, Paul R., Obstfeld, Maurice & Melitz, Marc. (2011). International economic: Theory and Policy. Pearson Education.
Levine, R. (1991). Stock markets, growth, and tax policy. *Journal of Finance.*
Li, Min. (2003). Inflation and economic growth: threshold effects and transmission mechanism. University of Alberta.
Lucas, R. E. (1972) Expectations and the Neutrality of Money, Amsterdam, Elsevier Science, Journal of Economic Theory 4, p 103-1 24.
Lucian & Liviu. (2010). Scenarios for post-crisis period based on a set of presumed changes in the interest rate – investment – GDP growth relationship. Institute for Economic Forecasting, Romanian Academy.
Macroeconomic Policy Analysis and Management, Training and Programme Report, Ibadan, Nigeria.
Mahamadu, B., Otoo, P. A. (2003): Monetary Growth, Exchange Rates and Inflation in Ghana: An Error Correction Analysis, Working Paper, WP/BOG-2003/05.
Manurung, Adler Haymans. (2004). Siklus bursa saham: Sebuah penelitian empiris di BEJ Januari 1988 – 2004. Kertas Kerja PT Nikko Securities Nigeria.
Marta, M., Peter S. and Anita, T. (2004): Inflation, Exchange Rates and the Role of Monetary policy in Albania, Working Paper, 88.
Masha, 1. (2000): New Perspectives on Inflation in Nigeria in Central Bank of Nigeria, CBN Economic and Financial Review, 3 8(2).
McCarthy. (2000). Pass-Through of Exchange Rates and Import Prices to Domestic Inflation in Some Industrialized Economies. IMF working paper.
McConnel, Campbell R. & Brue, Stanley L. (2008). Economics. Mc Graw Hill International Edition.
Mohtadi, Hamid & Agarwal. (2004). Stock market development and economic growth: Evidence from developing countries. University of Wisconsin-Milwaukee and Senior Quantitative Analyst, Fleet Financial, Providence, RI.
Montiel, P. J. (1989): Empirical Analysis of High-Inflation Episodes in Argentina and Brazil, Washington. D. C, International Monetary Fund (IMF), Staff Papers, 36 (3), P 527—549
Mordi, M.C. (2006): Challenges of Exchange Rate Volatility in Economic Management of Nigeria, In the Dynamics of Exchange Rate in Nigeria, CBN Bullion Vol. 30 (3), July-September. Pp.17-25
Moser, G. (1995): The Main Determinants of Inflation in Nigeria, IMF Staff Papers, 42.
Mudrajad, Kuncoro. 2001. Manajemen keuangan internasional. BPFE Yogyakarta.
Nachmias, D. and Nachmias, C. (1976): *Research Methods in Social Sciences*, U.K., Edward Arnolds.
NCEMA (1996): (National Center for Economic Management and Administation), Macroeconomic Policy Analysis and Management, Training and Programme Report, Ibadan, Nigeria.
Nigeria Stock Exchange. (2010). Buku Panduan Indeks Harga Saham Bursa Efek Nigeria.
Njuguna S., Ndung'u. (1993): Dynamics of the Inflationary Process in Kenya Goteborg, Sweden, University of Goteborg. Number3, September2012
Njuguna, S. Ndung, u. (1997): Monetary and Exchange Rate policy in Kenya, African Economic Research Corsortium (AERC), Research Paper.
Odusola A.F., Akinlo, A. E. (2001): Output, Inflation and Exchange rate in Developing Countries: An Application to Nigeria.
Olisadebe (1991) Foreign Exchange Market and Economic Growth in an Emerging Market: Evidence from Nigeria'. African Economic Business Review vol. 2.
Omotor, G.D. (2008): Exchange Rate Reform and its Inflationary Consequences The Case of Nigeria. Economski Pregled, 59 (11):
Osaze, B. E. (2007). Capital Markets–African & Global. *Lagos: Bookhouse*.
Oyejide TA, (1989): Thoughts on Stability of Nigeria's Exchange Rate. The Nigerian Banker, September — December.
Oyejide, T. A. (1986): The effects of trade and exchange rate'policies on agriculture in Nigeria. Research (International Food Policy Research Institute), Washington, DC, USA
Patterson, Ben & Lygnerud, Kristina. (1999). The determination of interest rates. European Parliament L-2929 Luxembourg.
Puspitaningrum, Suhadak & Zahroh. (2014). Pengaruh tingkat inflasi, tingkat suku bunga SBI, dan pertumbuhan ekonomi terhadap nilai tukar rupiah. Jurnal Administrasi Bisnis.

Quirk, P. J. (1994): Fixed or Floating Exchange Regimes: Does It Matter for Inflation? IMF Working Paper, 94/134.
Rahmanta. (2012). Pengaruh produk domestik bruto dan SBI terhadap penerimaan pajak di Nigeria. QE Journal.
Rapidly Developing Countries: Theory, Practice, and Policy Issues. University of Chicago Press.
Razazadehkarsalari, A., Haghir, F. and Behrooznia, A. (2011): The Effect of Exchange Rate Fluctuations on Real GDP in Iran, American Journal of Scienti Ic Research Issue, 26, Pp. 6-18.
Ricardo, D. (1817): Principles of Political Economy and Taxation, London, Murrary Publication.
Rodrik, Dani. (2008). The real exchange rate and economic growth. Harvard University.
Rogoff, K. (2001). Perspectives on exchange rate volatility in: Feldstein, M. (ed), International Capital Flows, Chicago: University of Chicago Press, 441 —453
Rutasitara, L. (2004). Exchange rate regimes and inflation in Tanzania, Research Paper, African Economic Research Consortium, Nairobi, Kenya, 138.
Sargent, T. and Wallace, N. (1981). Some Unpleasant Monetarist Arithmetic, Quarterly Review Federal Reserve Bank of Minneapolis, No. 5, Pp. 1-18.
Sargent, T. j. and Hansen, L. P. (1980). Formulation and Estimating Dynamic Linear Rational Expectations Models, Amsterdam, Elsevier Sciences, Journal of Economic Dynamics and Control, 2(11), P 7-46.
Saunders, M. Lewis, P. and Thornhill, A. (1997): *Research methods for Business Students*, Pittman, London.
Semuel, H., & Nurina, S. (2015). Analysis of the Effect of Inflation, Interest Rates, and Exchange Rates on Gross Domestic Product (GDP) in Nigeria. *International Conference on Global Business, Economics, Finance and Social Sciences*, 01-13.
Smith, C. E. (1999): Exchange rate variation, commodity price variation and the implications for international trade, Journal of International Money and Finance, 18, pp, 471—491.
Sowa, N.K. and Kwakye, J.K. (1993): Inflationary Trends and Control in Ghana, Research Paper, African Economic Research Consortium, Nairobi, 22
Sukirno, Sadono. (2003). Pengantar Teori Makro Ekonomi. PT Raja Grafindo Persada
Sutherland, A. (2002): Incomplete pass-through and the welfare effects of exchange rate variability, CEPR, Discussion Paper No 3431
Tiwari, Rajanish. (2003). Post – Crisis exchange rates regimes in Southeast Asia: an empirical survey of the facto policies. University of Hamburg.
Udoka, Chris O. & Roland, Anyingang. (2012). The effect of interest rate fluctuation on the economic growth of Nigeria, 1970-2010. *International Journal of Business and Social Science.*
United Nations Economic Commission on Africa (UNECA), (1989). An African Alternative to Structural Adjustment Programs, Addis Ababa.
Wibowo, Tri & Amir, Hidayat. (2005). Faktor – faktor yang mempengaruhi nilai tukar rupiah
Yahya, K.A. (2000). Structural Disequilibrium and Inflation in Nigeria: A Theoretical and Empirical Analysis, Center for Economic Research on Africa, School of Business, Montclair State University, Upper Montclair, New Jersey, 07043.
Yartey, C. A. (2009). The stock market and the financing of corporate growth in Africa: the case of Ghana. *Emerging Markets Finance and Trade*, *45*(4), 53-68.