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Money Market and the Nigerian Economy

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ABSTRACT
This study examines the Nigerian money market. It instruments and the influence of excess reserve ratio, interest rate as monetary policy tools to control the flow/level of funds in circulation. Finally, a linear regression analysis is run using SPSS to determine how effective these monetary policy tools adopted have influenced the demand for money in Nigeria since 1980. It was therefore recommended that the CBN should discourage the use of short-term funds to finance long-term projects among others.

INTRODUCTION

Money market is a market for short term funds, and the commodity traded in money market is near money. This provides the basis for the operation of the government monetary policy. Monetary policy is concerned with the availability, cost and direction of money and credit in the economy, which will help to influence economic activities in the required direction. According to Nwankwo (1980). the establishment of a money market in Nigeria came as a result of the felt need to "Nigerianize the country's credit base, which will enhance investment and retention of idle cash balances. The Nigeria economy had no organized money market as at independence and hence the resort to total movement of funds for investment in the London money market (that is. total capital flight from the economy to outside economy). This halted or slowed the general development of the Nigeria economy. Nwankwo (1990). Thus, steps were taken to establish Nigeria money market by localizing credit base so as to provide funds for local investment in Nigeria and the investment of funds repatriated from abroad. Based on government persuasion and in order to finance government short term fund requirement, a money market was considered a necessary machinery to enable the establishment of monetary autonomy which makes up the workings of an independent modem state, the progress and prosperity of a nation.

CONCEPTUL ISSUES

Okoro (2004) categorized the Nigeria money market into commercial papers and treasury papers. The commercial papers are instruments (unsecured promissory note) issued by non government bodies to raise short term funds from the public (surplus unit) for investment. These instruments can be issued as bills of exchange, promissory note, certificate of deposit, bankers' acceptance and bankers' unit fund. Treasury Papers are instruments issued by government so as to either control the immediate availability supply of funds in the economy or to gather funds for immediate infrastructural development of the economy, as exhibited by state government recently. They can be issued as treasury bills, treasury certificate etc. The major participating institutions in the Nigeria money market apart from CBN who act on behalf of the government are Deposit Money Banks, discount houses, bill brokers, finance house, etc. and acceptance houses. They all use the money market to finance their immediate cash requirements in the period of deficit or lack of funds. These instruments have their maturity ranging

between 3 months and 36 months.

Money Supply: This refers to the sum total of currency in circulation and the demand deposits in banks. Currency in circulation is made up of coins and notes outside the bank, while demand deposits are current account balances. To financial analyst, savings account is part of money supply because people spending level are predictable by monetary data. The CBN who is the issuer of these currency use high powered money to control the supply of money in the economy (High powered money is the sum of commercial bank reserves and currency held by the public).

Reserve (Requirement) Ratio: Banks are statutorily required to keep a certain percentage of their total deposits with the central bank. By altering the reserve ratio, the CBN is able to influence the lending behaviour of banks. Changes in reserve requirement ratio also change the money supply, by value of the money multiplier. When the reserve requirement ratio is raised banks keep more reserves with the Central Bank and this will reduce their lending and the money multiplier process; thus the money supply will fall and interest rate increases.

Gross Domestic Product (GDP): This measure the market value of all final output of goods and services produced on the domestic soil of a nation. It is concerned with the resultant output arising from the interaction of foreign and local capital.

Inflation Rate: This is a persistent rise in the general price level. These rate changes value of money from time to time; hence, the demand for money.

A Priori Expectation: The a priori expectation establishing the economic relationship between the dependent variable and independent variables (i.e. where the independent variable are positive or negatively related to the dependent variable).

$M_2 = b_Q + RR + b_2\ INF + b_3\ GDP + E_t$ It is expected that excess reserve ratio will be negatively related to the broad money supply (M2) this is because the higher the (excess) reserve requirement, the lower funds will be made available to the economy. It is expected that inflation rate will be positively related to the broad money supply (M2) which is because the more money that is put into circulation, the higher the inflation. GDP is expected to be positively related to money supply (M2) because the more money in circulation for investment, the more the output (production) that will be generated in the economy.

METHODOLOGY

This is a quasi-experimental study, designed to find out how the gross domestic product, excess reserve ratio and inflation rate have affected the total money supply in the economy via issuing of securities by CBN. The data were collected from the CBN statistical bulletin 2009. The method adopted in analyzing the data is by running a linear regression analysis with software known as SPSS 7.1 version. Regression is an economic method that has been widely used to derive estimation of the parameter of economy relationship from statistical observation: It is a satisfied theory that deals with relationship of various parameters either with small amount of data or large data with great variability in its factors Koutsoyiannis (1973). Money supply is the dependent variable, while excess reserve ratio, inflation rate and gross domestic product are the

independent variables. Hence, M_2 = f (RR, INF, GDP). Mathematically, $M_2 = b_0 + RR + b_2$ INF + b_3 GDP
Where:
b_0 = Constant (intercept)
b_2 - b_3 = Parameters
M_2= Broad money supply
RR = Excess reserve ratio
INF = Inflation rate
GDP = Gross Domestic Product

Econometrically.
M, = b_0 + b, RR + b_2 INF + b_3 GDP + E_t

Where:
$E_($ = Stochastic error term

PRESENTATION AND INTERPRETATION OF RESULT
M_2= 1018482.762 - 0.127RR +0.025INF + 0.907GDP
R Square = 0.832 = 83.2%
Adjusted R square = 0.813 = 81.3 %
F - Statistics = 43.036
Durbin Watson statistics = 0.453 = 0.5
Number of observation = 30

The data used for analyzing were sourced from the statistical bulletin of the Central Bank of Nigeria 2009 and estimated using a linear regression technique. The estimation was facilitated by the use of statistical software known as SPSS 7.10. The linear regressions of the model were examined and the result was adopted because it performed in terms of the goodness of fit (R Square). The result shows an R-square of 0.832, which indicate that 83.2% variation in the dependent variable is explained by the explanatory variables, while 16.8% is captured in the stochastic error term. The result also shows the adjusted R-square of 0.813 and co-efficient of excess reserve ratio as -0.127 which implies that a change in excess reserve ratio will have 12.7% effect on the money supply. The coefficient of inflation rate is observed to be 0.025, which conforms to a priori expectation and that inflation is positively correlated with money supply. Explaining that the more money in circulation in the economy the more the inflation rate. The coefficient of gross domestic product is determined to be 0.907 and positively conform to the a priori expectation, which shows that gross domestic product correlate positively to the money supply, and that any change in 1 unit of GDP will cause the money supply to change by the value of the coefficient. The statistical result also showed that the F-statistics had a 43,036. which shows that at 5% level of significance, the overall model is significant. This is because the F-calculated statistics of43.036 is greater than the F-tabulated statistics of 2.92. The result of Durbin Watson statistic of0.453 shows that there is minimal auto correlation in the model. The study also explain how significantly related the dependent variable is with the explanatory variables. The excess reserve ratio is significantly related to the money supply because a unit change in excess reserve ratio will cause 16.8% variation in money supply. This is also the same with inflation rate as a change in 1 unit of inflation will cause the level of money supply to change by 78.9%. However, the GDP is not statistically significant in

explaining the changes in the dependent variable.

CONCLUDING REMARKS

The Nigerian economy is a volatile one. Thus, we infer that inflation and excess reserve ratio are some of the factors that could lead to variation in money supply. The study shows that steady state of inflation volatility influences the demand for money in the economy. In order to avoid high inflation rate, there should be legislation with respect to cash, liquidity and reserve requirements for banks and other financial institutions to curtail their loan outlet so as to reduce quantity of larger money pursuing fewer goods. For instance between 2006 and 2007 the level of change in money supply was 52% (i.e. the previous year increase by 52%) while the period equivalent for GDP was 6.5%. The dominance of government instrument in the money market should be limited so as to reduce the dictate of the tune of the market to policies and not government demand for short term borrowing. A secondary' market should conspicuously be made available for the existing money market instruments which will serve as an incentive for the growth of an active money market. There should be a more survival strategy by banks and finance houses through massive rediscount at the CBN, aggressive liquidity drive and call money scheme should be enhanced.

The CBN should make stringent rule to discourage increasing resort to funding in the money market instead of the capital market based on the timing requirement of funds needed. Hence, the federal government through CBN should make a short time interest lag, which will influence the real rate of interest on cash (treasury bills, bank deposits, and money market funds) to bring about the necessary difference on the demand for money. Finally, there should be legislation that will reduce the level of uncertainty and lack of confidence in the market. This legislation should also reduce the gap between lending and deposit rates.

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APPENDIX

Regression/Descriptives Mean Stddev Corr SigN/Missing Listwise/Statistics Coeff Outs Ci(95) Bcov R Anova Collin Tol Change Zpp/Criteria=Pin(.05) Pout (10) /Noorigin/ Dependent Moneysupply/Method=Enter Excessreserve ratio Inflationrate Gdp/Residuals Durbin/Casewise Plot(zresid) Outliers(3).

Regression Notes

Output Created		05-Mar-2011 12:54:29
Comments		
Input		DataSetO
	Active Dataset	<none>
	Filter	<none>
Missing Value	Weight	<none>
Handling	Split File	
	N of Rows in Working Data File	30
	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics are based on cases with no missing values for any variable used.
Syntax		REGRESSION /DESCRIPTIVES MEAN STDDEV CORRSIGN /MISSING LISTWISE /STATISTICS COEFF OUTS CI(95) BCOV R ANOVA COLLIN TOL CHANGE ZPP /CRITERIA=PIN(.05) POUT(.10) /NOORIGIN /DEPENDENT MONEY SUPPLY /METHOD=ENTER EXCESS RESERVERATIO INFLATIONRATE GDP /RESIDUALS DURBIN /CASEWISE PLOT(ZRESID) 0UILIERS(3).
Resources	Processor Time	0:00:00.094
	Elapsed Time	0:00:00.231
	Memory Required	1956 bytes
	Additional Memory Required for Residual Plots	0 bytes

Source: Software Computation

Descriptive Statistics

	Mean	Std. Deviation	N
MONEYSUPPLY	668364.0033	1.11464E6	30
EXCESSRESERVERATIO	12.8017	4.95782	30
INFLATIONRATE	22.1567	19.94689	30
GDP	334483.4700	1.67182E5	30

Correlations

	MONEY SUPPLY	EXCESS RESERVE RATIO	INFLATION RATE	GDP
Pearson Correlation MONEY SUPPLY	1.000	-.146	-.269	.905
EXCESSRESERVE RATIO	-.146	1.000	.441	-.033
INFLATION RATE	-.269	.441	1.000	-.263
GDP.	905	-.033	-.263	1.000
Sig. (1-tailed) 'MONEYSUPPLY	.	.220	.075	.000
EXCESSRESERVE RATIO	.220	.	.007	.431
INFLATION RATE	.075	.007		.080
GDP	.000	.431	.080	
N MONEYSUPPLY	30	30	30	30
EXCESSRESERVE RATIO	30	30	30	30
INFLATION RATE	30	30	30	30
GDP	30	30	30	30

Variables Entered/Removed

Model	Variables Entered	Variables Removed	Method
1	GDP, EXCESSRESERVE RATIO, INFLATIONRATE[a]		Enter

Source: Software Computation

a. All requested variables entered.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	dfl	df2	Sig. F Change	
1	912a	.832	.813	4.81969E5	.832	43.036	3	26	.000	.453

Source: Software Computation

a. Predictors: (Constant), GDP, EXCESSRESERVERATIO, INFLATIONRATE

b. Dependent Variable: MONEYSUPPLY

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficient	t	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
	B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1 (Constant)	-1018482.764	314041.945		-3.243	.003	-1664005.226	-372960.301					
EXCESSRESERVERATIO	-28663.842	20206.839	-.127	-1.41$	.168	-70199.595	12871.911	-.146	-.268	-.114	.798	1.253
INFLATIONRATE	1403.568	5202.377	.025	.270	.789	-9290.072	12097.207	-.269	.053	.022	.744	1.344
GDP	6.047	.557	.907	10.849	.000	4.902	7.193	.905	.905	.871	.922	1.084

a. Dependent Variable: MONEYSUPPLY

Coefficients[a]

Model	Unstandardized oefflcients		Standardized (^efficients	t	Si	95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
	B	Sid. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
(Constant)	-	314041.945		-3.24:	.003	-1664005.226	-372960.301					
EXCESSRESERVERATIO	1018482.764	20206.839	-.127	-1.419	.168	“70199.595	12871.911	-.146	-.268	-.114	.798	1.253
INFLATIONRATE	-28663.842	5202.377	.025	**270**	.789	-9290.072	12097.207	-.269	.053	.022	.744	1.344
GDP	1403.568	.557	.907	10.84	**,000**	4.902	7.193	.905	.905	.871	.922	1.084

Source: Software Computation

a. Dependent Variable: MONEYSUPPLY

ANOVA[b]

Model	**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
1 Regression	2.999E13	3	9.997E12	43.036	,000a
Residual	6.040E12	26	2.323E11		
Total	3.603E13	29			

a. Predictors: (Constant), GDP, EXCESSRESERVERATIO, INFLATIONRATE
b. Dependent Variable: MONEYSUPPLY

Coefficient Correlations[a]

Model		**GDP**	**EXCESS RESERVE RATIO**	**INFLATION RATE**
Correlations	GDP	1.000	-.096	.277
	EXCESS RESERVE RATIO	-.096	1.000	-.448
	INFLATIONRATE	.277	-.448	1.000
Covariances	GDP	.311	-1078.076	802.122
	EXCESSRESERVE RATIO	-1078.076	4.083E8	-4.713E7
	INFLATIONRATE	802.122	-4.713E7	2.706E7

a. Dependent Variable: MONEYSUPPLY

Collinearity Diagnostics[3]

Model	Dimension	Eigen value	Condition Index	(Constant)	Variance Proportions		
					EXCESS RESERVE RATIO	INFLATION RATE	GDP
1	1	3.417	1.000	.01	.01	.02	.01
	2	.424	2.837	.01	.00	.48	.14
	3	.107	5.659	.05	.40	.49	.60
	4	.052	8.109	.94	.60	.00	.25

Source: Software Computation

a. Dependent Variable: MONEYSUPPLY

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	-984264.0625	2.953 7E6	668364.0033	1.01694E6	30
Residual	-7.23102E5	1.42026E6	.00000	4.56359E5	30
Std. Predicted Value	-1.625	2.247	.000	1.000	30
Std. Residual	-1.500	2.947	.000	.947	30

Source: Software Computation

a. Dependent Variable: MONEYSUPPLY

Reference to this paper should be made as follows: Ozigbo, S. (2015), Money Market and the Nigerian Economy. *J. of Management and Corporate Governance,* Vol. 7, No. 2, Pp. 69 – 78.