The Impact of Monetary Policy on Corporate Investment in Nigeria

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Abstract: The highly unstable economic conditions in Nigeria desire government intervention through regulated public policies. Based on the above, the study investigated the impact of monetary policy on corporate investment in Nigeria, and seeks to examine the effect of monetary policy (interest rate) on corporate investment. Four hypotheses were formulated and tested using multiple regression technique. Data were obtained from Central Bank of Nigeria (CBN) Statistical Bulletin and Companies Annual Reports and Accounts. The Study revealed that there is no significant relationship between the volume of investment and interest rate, and there exist a weak relationship between the cost of capital and interest rate. The capital structure of firms in Nigeria is highly influence by interest rate. The ineffectiveness of interest rate has been attributed to the imperfect market conditions. Therefore, the study recommended that, the government should make an effective policy that will correct these market conditions, and interest rate policy should he applied in conjunction with other tools of public policy

Keywords: Corporate investment, monetary policy, market conditions and manufacture companies.

1. INTRODUCTION

Financial experts and policy makers believe that real life market economies are fraught with both structural and operational imperfections, for one high profit tend to keep turnover low and these profits are maintained only by limiting entry. According to Haley and Schall, (1972), and Bassey, (1982) assert that where entry restrictions are impossible, the combination of free entry and price fixing leads to over capacity and underutilization of resources. The free market system is characterized by favouritism, hoarding, and discrimination, among others. The inherent imperfections prevent price from reflecting the true scarcity values or marginal productivities of available resources. Thus, with the resultant stagnation, fluctuation in price level and low levels of employment will make the market economy unstable.

Recognizing that the completely unfettered play of the market mechanism is completely unfettered, it lead to a highly unstable economic situation which forces government to embark on specific policies that will directed the creation of conditions which stimulate economic growth. These policies often have the desired impact on rapid and stable economic growth and development, and can also stifle economic growth and development (Johnbull, 2009, and Nzotta, 2003).

But in Nigeria, very little has been done to examine their effectiveness and their applicability (Anamakiri, 2010). The rationales for their applicability seem to be that as long as they are successfully applied in developed and developing economies. This can been done irrespective of the differences in the socio-economic environment and the level of technological development as far as it was targeted with good faith (Anamakiri, 2010).

Interest rate is one of the tools of monetary policy used for controlling the activity of the economy and it is one of the major instruments or market intervention in Nigeria. However, the Study is geared to determine the impact of interest rate on corporate investment in Nigeria. The specific objectives of the study are to examine the extent to which changes in the rate of interest influences;

The volume of firms investment in Nigeria,

Their cost of capital,

Their capital structure (financing), and

Financing behaviours of Nigeria firms

Based on the above, three null hypotheses were formulated for testing, viz:

There is no significant relationship between changes in the volume of investment and the level of interest rate.

There is no relationship between the cost of capital and the rate or interest, and

The type of financing used by a firm does not vary significantly impact on the rate of interest.

2. LITERATURE REVIEW

2.1. Monetary Policy in Nigeria

Monetary policy has been defined as those measures formulated to influence or regulate the quantity or volume of money, its price or rate of interest, and its allocation. It also includes polices on the balance of payments, the exchange rates and external reserves management (Nwankwo 1979). According to Vincent, (1979) monetary policy is designed to ensure that money supply in the economy is just enough to support desirable and sustainable growth.

The traditional techniques of monetary control can be classified as qualitative or quantitative. The quantitative techniques have to do with the volume of money, (Open Market Operations (OMO), reserve requirement (Rrt), the cash liquidity ratios (Clrs), and changes in the discount rates Cdrs). The OMO involves the purchase or sale of government securities. This is aimed at controlling the availability of loable funds by the banks. The bank rate or discount rate is very important as any interest rate charged by any bank or other financial institutions is function of their investment. Banks borrow from the Central Bank to enable them replenish their reserves, to be able to create deposits, extend loans to their customers and create money. Banks increases interest rate to reduces the demand for loan, and reduces interest rate to encourage borrowing for investments. Hence, Olalokun, (1979) point out that the Central Bank is regulate money creation by the banks through the discount rate policy. While the qualitative techniques of monetary policy is primary for the direction and distribution of money through moral suasion and selective credit or Credit Guidelines.

2.2. Monetary Policy (Interest Rate) and Investment Decisions

The word "firm" is used to mean all companies whether incorporated or unincorporated in Nigeria. Firms exist to pursue the goals of their owners. Hence the ultimate objective which managers aim at achieving is profit maximization. In order to ensure continuous profits for capital expansion, firms are involved in undertaking investment (projects). This means making huge expenditures in expectation of realizing future benefits (Guven et al, 2006, Hamada, 1969, and Imegi, 2008). Consequently investment decision making is a cardinal point in any business set up and therefore constitutes one of the most demanding challenges confronting management. I-or such a decision making is a cardinal point in any business one or the most demanding challenges confronting management. For such a decision which has a significant impact on the investing firm and the entire economy, needs a governing rule to guide it. This rule must therefore he closely tied up with the objective of the firm. This rule must provide a better basis and guidelines for investment decision to be taken.

According to Anamakiri. (2006) investment decision must be taken on a large holistic basis vis-a-vis prevailing interest rate as to enhance undertaking a reasonable and profitable project. When a project is considered on its holistic basis, it leads to failure. This can also be attributed to the absence of satisfactory methods of analysis adopted. Many techniques exist to help firms analyze their wide variety of investment problems. Such techniques includes accounting rate of return profitability index, net present return. Internal rate of return among others. The widely used criterion which also takes care of the risk element is the Net Present Value. The stream of return at the end of each year is discounted at a given rate. That rate help to find their present value. According to this criterion, a project is worthwhile only if its net present value is positive or at least equal to zero. In other words,

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to be able to maximize profits or the present values of the firm, a project should only be accepted if the returns exceeds the required initial capital outlay or equals it. (Boateng, 2004; Chen. 2003; De Miguel and Pindado, 2001 and Bassey, 1981). Apart from the present value of the future returns on investment, the corporate investment rule for a profit maximizing firm can be also stated in terms of the cost of capital. According to Samuel et al (1995), cost of capital can be equated to that rate of return which an investment must earn to maintain the value of the company.

2.3. Monetary Policy and Corporate Financing Decision

Financing decisions involved on how firms should finance its portfolio of investments. However, there are more than one source of finance available to a firm. Each source usually has a different maturities date, risk elements, cost and ease of raising such funds. The financial manager needs to take decisions involving source/type, the mix, the timing of the fund and the payout/retention ratio that will help in the maximization of the firm's objectives.

The aim of corporate financing is to maximizing the firm's market value (Guven et al 2006 and Myers, 1984), the shareholders wealth (De Miguel and Pindado, 2001; Jensen, 1986).

This irrelevance was reexamined with the consideration of taxation and the real world situations (Modigliani and Miller, 1963). There are many strands on the opinion of corporate financial structure in the received literature. The first of these is the invariance theorem, the genesis which dates the classical work of Modiglani and Miller (1958). This view which has been subsequently validated by financial economists (Myers and Majluk, 1984, Hamada. 1969 and Pandey, 2001) relaxed and Hamada, 1969). The assumption briefly stated that in the absence of taxes and bankruptcy risk, the value of the firm is independent of its capital structure and its method of financing is irrelevant.

On the other hand, the advocates of the traditional theory contend that the total value of a firm is a well-behaved function of corporate financial structure even in the absence of taxes and risk of bankruptcy. Other authors that tried to explain the true situation of capital structure decision includes the work of Beattice et al 2004; Quan. 2002; Nidyo, 2005; Chen 2003; Ozkan, 2001 and Graham 2000). At present the debate between these two opinions is very crucial in the field of financing decision making but remains unresolved, as economics have rarely been the subject of research in this field as indicated by Wiwattanakantang (1999) for Taiwan, Schulman et al (1996) for New Zeland, Chen (2003) for China, Boateng (2004) for Ghana, and Anamakiri, (2006) for Nigeria respectively.

3. RESEARCH METHODOLOGY AND MODEL SPECIFICATION

This study is largely empirical, and multiple regression technique was adopted for analysis. The population of this study consists of manufacturing firms in Nigeria. Information the Nigerian Stock Exchange Factsbook, 2009 revealed that there are a total of 57 manufacturing companies registered with the Nigerian Stock Exchange. The study employed a random sampling technique. Dates were derived mainly through secondary sources. The following models were specified for the testing of our hypotheses, viz:

i. Hypothesis 1: Interest Rate and the volume of investment and minimum lending rate is formulated as, $Y = b_0 + b_1x_1 + b_2x_2 + e$

Where:

Y = (The dependent variable), represents the percentage change in the volume of investment.

 $X_I =$ (Independent explanatory variable), represent the minimum lending rate), and

 X_2 = (Another independent variable) represents the percentage change in national income, while b_0, b_1 and b_2 are the partial regression coefficients)

E = represents error term

Hypothesis 2: Interest Rate and cost of capital, and minimum lending rate is formulated as:

 $Y = b_0 + b_1 z_1 \!\! + b_2 z_2 + e$

Where:

Y =the cost of capital

 Z_{I} = the change in the volume of investment

 Z_2 = the minimum lending rate, and

E = the error terms.

ii. Hypothesis 3: Interest Rate and capital structure, and retention rate is formulated as

 $Y = b_0 + b_1 q_1 + b_2 q_2 + e$

Where:

Y = the gearing level (or capital structure)

 $q_I = Interest rate$

 q_2 = Retention ratio

 b_0b_1 and b_2 are the partial regression coefficients, and

e = The Error terms

4. DATA ANALYSES AND RESULTS

Table 1 revealed a high coefficient of relationship, ranging from 0.85 for case 1 to 0.82 to case 5. In order to determine the level of the t-tests result revealed that the values oft-test were statistically insignificant in all the five cases at the 5 percent level of significance. Thus, we accept the null hypothesis, and conclude that there is no significant relationship between changes in the volume of investment and the level of interest rate in Nigerian manufacturing firms. (See table I Appendix). Table 2 revealed that the regression coefficient (R^2) values were all greater than zero but relatively low except in cases 3 and 5 where the values were 0.96 and 0.78 respectively. The t-test results for the first independent variable (changes in the volume of investment) were not significant in four cases at 5 percent level. The second independent variables (interest rate or MLR) recorded t-values which were significant at the 5 percent level except in cases I and 5. Consequently, accept the alternative (Hi) which states that there is a relationship between the cost of capital and the rate of interest. (See table 2 Appendix). Table 3 revealed that the R^2 values obtained were high for the five cases examined. These values ranged from 0.82 to 0.99., and the t-values obtained in case 1 for the two independent variables were both significant at 5 percent level of significance. For cases 2 and 4, the t-value for the first independent variable (interest rate) was not significant but its t-values were significant for cases 3 and 5. Given the three cases out of five where the t-test results were significant for the interest rate, we can confidently accept the alternative hypothesis (Hi) and conclude that the gearing level varies with the rate of interest. (See table 3 Appendix).

Generally, the result on the relationship between interest rate and the volume of investment could he inferred with 95% certainty that the rate of interest does not have any significant effect on the changes in the volume of investment. This ineffectiveness of interest rate as a tool of monetary policy for the regulation of the volume of investment in Nigeria could be attributed to the imperfect market within which these firms operate. In other words, these firms are semi-monopolists with huge abnormal profits as seen in their published balance sheets and hence changes in the rate of interest do not have a significant effect on the volume of investment undertaken by them. Consequently, their investment decisions and policies can not be effectively regulated by the government via tools of monetary policy like the interest rate. While, the relationship between interest rate and cost of capital could be inferred with 95% certainty. Hence, the variations in the cost of capital are caused by changes in the level of interest rate. Nevertheless, the relationship is weak in most of the cases examined. This implied that the minimum lending rate used is not very effective in the regulation of the cost of capital. This ineffectiveness of interest rate as a monetary policy tool can also be explained by the imperfect market conditions. Finally, the relationship between Interest Rate and Capital Structure stood at 95% certainty. This implied that between 82% and 99% of variations in the gearing level of the firms is caused by changes in the level or interest rate. The negative values of the coefficient revealed a negative relationship due to the impact the interest rate have on debt capital. The study revealed a great relationship between the gearing level and the interest rate could be explained in terms of the high degree or dependence on debt capital. This could be attributed to series of government policies on loans to industrial ventures.

5. CONCLUSION AND POLICY RECOMMENDATION

From both the theoretical and empirical evidence obtained we then conclude that Interest rate on its own is not at all an effective measure for controlling investment decisions in Nigeria. Interest rate as a monetary policy has not failed completely in the regulations of financing decisions in Nigeria. The study discovered that, sales, profitability and cash flows were the major determinants of the volume of

corporate investments. The ineffective impact of interest rate as a monetary policy tool on corporate investment in Nigeria has been mainly attributed to the imperfect market conditions under which these companies operate. Most of these firms are semi-monopolists with huge abnormal profits. Due to the above reason, government policy can have significant effect on their decision.

Based on the above, government and corporate organization should embark on policies that will correct the imperfection existing among multinational firms to create room for effective application of government policies and programmes, applied interest rate in conjunction with other tools of public policy, allowed interest rate to fluctuate according to market forces to enhance increase of volume of corporate investment, and monitor sales, profitability, and cash now as they are major determinants' of the volume of corporate investments.

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Appendix

Table1. Regression Results: Volume of Investment versus Minimum Lending Rate (MLR) and Gross Domestic Products (GDP).

CASES	INDEPENDENT	b_0	b 1	b ₂	\mathbb{R}^2		S(b)	Tb 0.05 =	F 0.05 V1
	VARIABLE							2.35 df=3	=2 V2 =
									200
1.	Minimum Lending Rate	1.12	1.51	6.17	0.852	2114.39	S(b ₀)=32.48	S(b ₀)=0.105	2.373
	and % Change in Gross						$S(b_1) = 9.28$	$S(b_1)=0.489$	
	Domestic Product						$S(b_2) = 7.73$	S(b ₂)=2.394	
2.	Minimum Lending Rate	0.821	3.281	1.637	0.655	2188.28	S(b ₀)=33.078	S(b ₀)=0.075	0.949
	and % Change in Gross						$S(b_1) = 9.437$	$S(b_1)=1.044$	
	Domestic Product						$S(b_2) = 7.866$	S(b2)=0.624	
3.	Minimum Lending Rate	6.307	6.856	13.04	0.83	3306.66	S(b ₀)=40.657	S(b ₀)=0.465	2.441
	and % Change in Gross						S(b ₁)=11.601	$S(b_1)=1.773$	
	Domestic Product						$S(b_2) = 9.669$	S(b ₂)=4.158	
4.	Minimum Lending Rate	-0.274	3.799	-1.39	0.91	86.62	S(b ₀)=6.574	S(b ₀)=0.126	5.056
	and % Change in Gross						$S(b_1) = 1.879$	$S(b_1) = 6.066$	
	Domestic Product						$S(b_2) = 1.565$	S(b ₂)=2.664	
5.	Minimum Lending Rate	0.184	1.365	3.879	0.821	1199.22	$S(b_0)=24.487$	S(b ₀)=0.024	2.318
	and % Change in Gross						$S(b_1) = 1.879$	S(b1)=0.585	
	Domestic Product						$S(b_2) = 7.565$	S(b ₂)=1.998	

Source: *Author's Estimation. From Table 1 – 3 (See Appendix)*

Table2. Regression Results: Cost of Capital versus Changes in the Volume of Investment and Minimum Lending Rate (MLR).

CASES	INDEPENDENT VARIABLE	b ₀	b ₁	b ₂	R ²		S(b)	Tb 0.05 = 2.35 df=3	F 0.05 V1 =2 V2 = 200
1.	% Changes in the Volume of Investment and Minimum Lending Rate	-0.367	-0.063	1.801	0.107	2255.72	$\begin{array}{c} S(b_0){=}3.58\\ S(b_1){=}0.806\\ S(b_2){=}7.688 \end{array}$	$\begin{array}{c} S(b_0) = 0.033 \\ S(b_1) = 0.234 \\ S(b_2) = 2.702 \end{array}$	0.0599
2.	% Changes in the Volume of Investment and Minimum Lending Rate	7.799	-0.434	3.749	0.443	2235.79	$\begin{array}{l} S(b_0){=}29.61\\ S(b_1)=0.75\\ S(b_2)=4.75 \end{array}$	$S(b_0)=0.789$ $S(b_1)=1.737$ $S(b_2)=2.373$	0.398
3.	% Changes in the Volume of Investment and Minimum Lending Rate	0.026	0.031	3.098	0.961	-75.276	$\begin{array}{l} S(b_0){=}16.33\\ S(b_1){=}0.279\\ S(b_2){=}3.111 \end{array}$	$S(b_0)=0.006$ $S(b_1)=0.333$ $S(b_2)=2.988$	12.69
4.	% Changes in the Volume of Investment and Minimum Lending Rate	-0.241	-0.66	2.649	0.458	368.02	$\begin{array}{l} S(b_0){=}13.565\\ S(b_1){=}1.251\\ S(b_2){=}3.223 \end{array}$	$S(b_0)=0.054$ $S(b_1)=1.584$ $S(b_2)=2.466$	0.423
5.	% Changes in the Volume of Investment and Minimum Lending	-2.276	0.734	2.365	0.78	405.25	$\begin{array}{l} S(b_0){=}14.235\\ S(b_1)=0.481\\ S(b_2)=3.138 \end{array}$	$S(b_0)=0.057$ $S(b_1)=4.758$ $S(b_2)=2.262$	1.773

	Rate						
Source:	Author's Estimation. Fr	om Table	e 1 – 3 (J	See App	endix)		

Table3.	Regression	Results:	Gearing	Level	versus	Minimum	Lending	Rate	(MLR) and	Retention	Ratios.
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CASES	INDEPENDENT VARIABLE	b ₀	b ₁	b ₂	\mathbb{R}^2		S(b)	Tb 0.05 = 2.35 df=3	F 0.05 V1 =2 V2 = 200
1.	Minimum Lending Rate and % Change in Gross Domestic Product	0.11	37.998	-2.178	0.996	103.025	$\begin{array}{l} S(b_0){=}7.18\\ S(b_1)=5.11\\ S(b_2)=0.42 \end{array}$	$S(b_0)=2.37$ $S(b_1)=22.308$ $S(b_2)=15.558$	124.5
2.	Minimum Lending Rate and % Change in Gross Domestic Product	-5.595	-13.14	3.44	0.82	28271.16	$S(b_0)=118.77$ 4 $S(b_1) =$ 119.91 $S(b_2) = 9.88$	$\begin{array}{c} S(b_0) = 0.1417 \\ S(b_1) = 0.33 \\ S(b_2) = 1.044 \end{array}$	3.417
3.	Minimum Lending Rate and % Change in Gross Domestic Product	-1.290	31.912	0.297	0.991	1731.19	$\begin{array}{l} S(b_0){=}29.39\\ S(b_1){=}119.91\\ S(b_2)=0.865 \end{array}$	$S(b_0)=0.132$ $S(b_1)=10.506$ $S(b_2)=1.029$	55.056
4.	Minimum Lending Rate and % Change in Gross Domestic Product	-0/27	5.05	1.898	0.99	420.12	$\begin{array}{l} S(b_0){=}14.49\\ S(b_1){=}11.14\\ S(b_2){=}1.87 \end{array}$	$S(b_0)=0.057$ $S(b_1)=1.35$ $S(b_2)=3.042$	49.5
5.	Minimum Lending Rate and % Change in Gross Domestic Product	-1.48	22.66	-0.81	0.93	2950.22	$S(b_0)=38.37$ $S(b_1)=14.58$ $S(b_2)=1.50$	$S(b_0)=0.117$ $S(b_1)=4.65$ $S(b_2)=1.53$	6.642

Source: *Author's Estimation. From Table* 1 - 3 *(See Appendix)*

Table4. Showing % change in the Volume of Investment, Gross Domestic Product (GDP) and Minimum Lending Rate (MLR)

Year		% (0/ Change in			
	Flour Mills	Berger Paint	Nigeria BreweriesGuinness NigeriaPlcPlc		Nigeria Bottling Company	MLR (X ₁)	GDP (X ₂)	
2002	32.79	53.75	13.74	35.50	51.95	19.00	4	
2003	17.65	62.79	12.47	67.00	123.82	15.75	11	
2004	69.50	85.34	2.34	10.51	37.32	15.00	8	
2005	11.22	13.11	26.31	28.98	-5.29	13.00	5	

Source: CBN Statistical Bulletin and Companies Annual Reports and Account.

Table5. Showing cost of capital, Minimum Lending Rate (MLR) and the Volume of Investment

Year	Cost of Capital (Y)						% Change in the Volume of Investment (X1)					
	Flour Mills	Berger Paint	Nigeria Breweries Plc	Guinness Nigeria Plc	Nigeria Bottling Company	Flour Mills	Berger Paint	Nigeria Breweries Plc	Guinness Nigeria Plc	Nigeria Bottling Company		
2002	45	10	-6	-10	27	32.79	53.75	11.74	35.50	51.95	19.00	
2004	26	31	-2	19	15	67.50	85.34	2.43	10.51	37.32	15.00	
2005	17	21	11	7	21	11.22	13.11	26.31	28.98	-5.29	13.00	

Source: CBN Statistical Bulletin and Companies Annual Reports and Account.

Table6. Showing Gearing Level, Minimum Lending Rate (MLR) and Retention Ratio

Year			Gearing le	evel				Retention R	lation		MLR
	Flour Mills	Berger Paint	Nigeria Breweri es Plc	Guinness Nigeria Plc	Nigeria Bottling Compan y	Flour Mills	Berger Paint	Nigeria Brewerie s Plc	Guinness Nigeria Plc	Nigeria Bottling Company	
2002	51	92	87	75	183	61	65	37	36	26	19.00
2004	106	42	87	61	191	76	82	30	81	72	15.75

Source: CBN Statistical Bulletin and Companies Annual Reports and Account.