Influence of Macroeconomic Variables on Capital Structure Decision of Manufacturing Companies in Nigeria

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A b s t r a c t

This study empirically examined the effect of selected macroeconomics variables and stock market development on the capital structure decisions of manufacturing companies in Nigeria for the period from 1998 to 2013. The study was conducted under three independent periods the same period, one quarter after and one year after the announcement of the macroeconomic variables. Data from sample of 40 manufacturing companies quoted in the Nigeria Stock Exchange were analyzed using descriptive statistics and Newey and West (1987) standard error. The findings indicate that changes in gross domestic product (GDP) significantly influence capital structure decision of manufacturing companies in Nigeria only in the quarter after the announcement of the GDP figure, while interest rate, inflation and stock market development did not support capital structure decision making by manufacturing companies in Nigeria in all the three periods. This support the salient notion that there is actually a marginal delay in the adaptation of GDP as determinant for financing decision making. The study recommends that, those in charge of making such decisions should monitor and follow the trend of GDP and probably other monetary policies of the Federal Government and regulatory authority that affects GDP in their decision making. Government should also initiate policies that will discourage manufacturing company from over dependence on equity but encourage the use of long term debts that could guarantee growth in the real sector.

Keywords: *Macroeconomic, Capital structure, Companies, GDP*

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Background to the Study

Increasing shareholder wealth (maximizing Earning Per Share) by achieving and maintaining a cost-efficient capital structure mix is one of the most important decision of a financial manager, the other significant decision is estimating the immediate and future capital of the firm. These decisions can hardly be understood in isolation from institutional and macroeconomic environment that characterize the country in which an organization operates (Antoniou, Guney and Paudyal, 2002; Korajczyk and Levy, 2003; Deesomak, Paudyal and Pescetto, 2004 and Demirguc-Kunt and Levine, 2004). This is partly because the institutional and the macroeconomic environment of a country cogently regulates the supply of capital by surplus units and demand for capital by deficit units for financing investments.

The study of economic development cannot be undertaken without the concept of macroeconomics. Macroeconomics as a concept studies the economy as a whole, whereas the concept of multiplier effect examines the effect of changes in any of the variable of macroeconomics. For example, an increase in money supply by the government of a country will reduce interest rate, which will encourage business owners to invest more in the economy. The household will also purchase more goods due to the increase in disposable income. An increase in the money supply causes domestic interest rates to fall below foreign interest rate, this leads to capital outflow and a depreciation of the domestic currency, net export increases and import decreases. Increased export leads to a decrease in the nominal and real interest rates. Invariably, aggregate demand, real gross domestic product (GDP) and price level increases in the short run giving way to inflation.

Similarly, as supported by several empirical studies, the stock market also has an overwhelming impact in the direction of any economy which also affects the way companies financed their investment (Levine & Zervos, 1998; Lettau & Ludvigson, 2001 and Black, Fraser & Groene world, 2003).

Theoretically, the adaptation of macro variable factors and stock market development as determinants in evaluating the composition of the capital structure of any firm is particularly based on all the theories of capital structure. The trade-off theory by Scot (1972) suggests that a firm should choose their mix of debt and equity financing by trading-off expected costs and benefits of debt financing. In this theory high inflation, decreasing GDP, decreasing market capitalization and high interest rate will lower the level of debt in the capital structure. The agency theory of capital structure by Jensen and Meckling (1976), pecking order theory (Myers, 1977) and signally theory (Ross, 1977) are also concerned with cost minimization for the firm.

Irrespective of the importance of macroeconomic variables as determinants of business financial decisions, most studies conducted on the determinants of capital structure used firm based determinants and data from developed countries, partially ignoring macroeconomic determinants and data from developing countries. Studies by Titman and Wessels (1988), Harris and Raviv (1991), Rajan and Zangeles (1995), Bevan and Danbolt (2002, 2004), Chen (2004), Chang, Lee, and Lee (2005), Tian, Qian and Wirjanto (2007), and Dincergok and Yalciner (2011), identifies firm based determinants like asset tangibility (the proportion of fixed to total assets), firm size, age of firm, profitability, asset growth, etc. as factors that either positively or negatively affects the decision of firms in choosing either debt or equity in their capital structure composition. Conversely, very few studies from Demirguc-Kunt

and Maksimovic (1996), Hatzinikolaou, Katsimbris, and Noulas (2002), Gurcharan (2010), Dincergok and Yalciner (2011), were conducted with data from developing countries using macroeconomic variables as determinants of capital structure.

More so, there are conflicting effects[1] of the various determinants on capital structure decisions in both developed and developing countries. Typical examples are the studies conducted by Demirguc-Kent and Maksimovic (1996), Antoniou, Guney and Paudyal (2002), and Bokpin and Isshaq (2008). Antoniou, Guney and Paudyal using data from developed countries indicates that inflation rate, profitability, tangibility and liquidity all relates negatively to leverage, while stock market development is positively related. Similarly, Bokpin and Isshaq testing data of listed companies from Ghana shows that stock market development does not have any relationship with leverage. Finally, the study conducted by Demirguc-Kent and Maksimovic using data from developing countries, indicates that stock market development negatively relates with leverage.

In addition, irrespective of the knowledge that macroeconomic changes effects on the capital structure decision of companies is not immediate, the decision has to go through a process especially for the public listed companies. Most studies conducted failed to identified these salient issues but instead empirically analyzed the influence of the various determinants on capital structure in the same period.

Against the backdrop of identified gaps, more studies are needed to gain in-depth knowledge of this interesting concept and provide solution to the gaps, as such the objective of this study is to empirically examine the influence of macroeconomic variables on the capital structure decisions of manufacturing companies in Nigeria, in addition, as a result of impact time lag after the announcement of the macro-variables, the study will go further to identify the particular period the announcement will impact on the capital structure decision.

To achieve the above objective, gross domestic product (GDP) growth rate, inflation rate, interest rate, and stock market development were selected as macro-variables, this selection is based on the tremendous effect of those variables on the economy of any country. The period of the study is from 1998 to 2013 and he variables are model against capital structure of the selected manufacturing companies using Newey and West (1987) standard error.

The remainder of this paper is structurally organized as follows: section two covers the literature review of related study on capital structure decision and the theory guiding this study. Section three presents the methodology of the study, section four discusses findings from the analyses and goes further to relate the finding, while the last section is the conclusion.

Literature Review
Literatures on capital structure decision can be view through different prospective; macro variables such as Gross Domestic Product (GDP), Interest rate, exchange rate, inflation, capital market development, etc., or institutional variables such as growth, size of firm, risk, cost of capital, tangibility, profitability, etc., as determinant of capital structure decision, country-cross sectional and time series study, dynamic or fixed capital structure study, testing the validity of the theories, etc. Despite this numerous variations and rich literatures on subject,

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[1]*See Appendix 1 for analysis for analysis of literature reviewed*

and as narrated below there still exist diverse conclusions on the specific impact of the perceived influence of macroeconomics variables on capital structure decisions of manufacturing firms.

Gross Domestic Product (GDP) Growth Rate
Gross domestic product (GDP) growth rate is a strong indicator of economic performances. High GDP is an indication of economic growth. As GDP increases, companies will continue to be financed by debt, to grow with the economy and meet the excess demand created by the growth in the economy. Therefore as stated by Myer (1977, p. 18) *"……..a positive relationship is expected between GDP growth and capital structure choice"*.

According to Booth, Demirguc-Kunt and Maksimovic (2001), increase in GDP leads to higher real income growth rate by consumers which lead to manufacturers increasing leverages to increase production capacity to accommodate the excess demand. Similarly, Muhammad (2003) examines listed companies from Japan, Malysia and Pakistan and found the growth in GDP per capita was positively related to the leverage of the firms.

Another paper by Bella and Mateus (2004) on listed corporations in Hungary and Portugal shows that GDP has a significant effect on corporate leverage in both countries.

Inflation Rate
Another important macroeconomic variable that affects corporate financial decision is the inflation effect in the country. This is because debt contracts are generally nominal contracts and high inflation is likely to discourage lenders from providing long-term debt (Fan, Twite, and Titman, 2006).

Hatzinikolaou, Katsimbris, and Noulas (2002), wrote on the effect of inflation on capital structure decisions. In their study, 30 Dow Jones corporations were examined using inflation uncertainty, expected real interest and asset tangibility, were examined, against debt to equity ratio using cross-sectional heteroskedastic and time-wiseautoregressive models. The result indicates that inflation uncertainty exerts a strong negative effect on firm's debt to equity ratio. According to the study, the negative effect of inflation uncertainty could be due to the fact that companies reduced debt financing of capital investment with the uncertainty in inflation or expectation of higher inflation.

In another study, Williams (2011) agrees that macroeconomic indicators (i.e. inflation and economic growth) are significant in both size, company capital adequacy and profit regressions. This may suggest that companies tend not to be profitable in inflationary environment. In addition, economic growth does not reflect any aspects of company regulations and technology advance in the manufacturing sector.

Change in Interest Rate
Since interest rate is a direct cost of debt, the trade-off theory supposes an inversed relationship between interest rate and the leverage ratio. Interest on debt capital is related to long fix commitment, as when market interest rate is high firms do not raise further loan.

Antoniou, Guney, and Paudyal (2002), and Muhammad (2003) wrote on the effect of interest or base lending rate on capital structure in developing and developed countries. Muhammad's study was on the listed corporations from Japan, Pakistan and Malaysia while Antoniou, Guney, and Paudyal undertook a study of listed companies in Europe. Muhammad concludes that the interest rate is actually a deciding factor for capital structure decision in those countries. Same as Antoniou, Guney, and Paudyal who maintained that the term structure of interest rate directly affects capital structure decisions as it is positively correlated with a debt equity ratio.

Similarly, Interest rate was one of the capital struture macroeconomic determinants consider by Gau and Wang (1990, p. 20), they found that as *"…interest rate rise, companies take lesser debt for financing as the increase in the cost of debt could later 'land' them in default risk"*

Stock Market Development
The viability of an economy can be boosted by developments in the financial market since the principal intermediation function provided by financial market participants has consequence for enhancing the pace of economic activity in the economy. Financial markets also play an important role of distributing resources and directing it towards the deficit sectors of the economy.

Demirguc-Kunt and Maksimovic (1996) put up the following arguments regarding the significance of stock market development for financing choice of firms:
i.   The replacement of outside equity through public offerings or stock exchange listing, to debt is somehow facilitated by stock market development stock market development. This function shows that stock market development has a negative effect to debt as this will lead to a decline in the debt-equity ratio.
iii.   Stock market development creates opportunities for new diversification ability which would be used by firms to expand, through debt or equity issue. The direction of effect of stock market development on capital structure will then depend on the financing choice made.
iv.   Stock market development assist in the flow of information, which improve corporate governance as well as lowering the cost of raising new debt or equity capital. The effect of this is that debt-equity ratio will be impacted negatively or positively by stock market development.
There are, however, few studies to support the relationship between stock market developments on capital structure. Demirguc-Kunt and Maksimovic (1996) analyzes the effects of stock market development on firms' financing choices using data from 30 developing countries (1980-1991). The study concluded that there exists a negative correlation between stock market development to total equity and ratios of long term, and short term debt to total equity.

In another study, Gianetti (2003) examines twenty six (26) European countries and concluded that characteristics, legal rules and financial development affect financial decision and that leverage is negatively correlated with stock market development. Agrawal and Mandelker (1987) examined the effects of financial market development on financing choices using twenty one (21) emerging markets from 1981 to 1997 and discovered that stock market development is negatively correlated with debt-equity ratio in the real sector but positive in the banking sector. But Bokpin and Isshaq (2008) in their study of the effect of stock market development and financing decisions of listed firms in Ghana concludes that unlike Demirguc-

Kunt and Maksimovic (1996), stock market development does not lead to the substitution of equity for debt and that market liquidity variables show mixed impact on the debt equity proportions suggesting that the size of the Ghanaian stock market is not yet significant to impact on financing choice of firms on the exchange.

The above review clearly shows the diverse view regarding the specific influence of the identified determinants on capital structure decision, while completely ignoring the independent timing of the various decisions. This study will reexamine most current data from manufacturing companies in Nigeria to provide further clarification on the subject.

Research Methodology
The whole essence of capital structure decision is to allow financial managers to find the capital structure that will maximize shareholders' wealth i.e., increase in EPS. The attainment of this objective depends on the ability of the company to identify and analyze the key determinants of capital structure such as macroeconomic variables, size, liquidity, growth, tangibility, profitability, gross domestic product (GDP) growth, firm risk, age of the firm, taxation, cost of capital, cash flow volatility, managerial ownership, and so on. The scope of this study is limited to selected macroeconomic variables, namely, gross domestic product (GDP) growth rate, inflation, change in interest rate, and stock market development.

For the purpose of achieving the study objective, quota sampling method was used to choose 40 manufacturing companies out of 164 listed in the first Tier of the Nigeria stock exchange (NSE). The companies were selected based on the criteria that the company must have employed long term debt as a source of finance in any of the years of the study and the companies selected must have been listed in the stock exchange throughout the period of this study[2].

Book value of the total long term debt and total asset figures for the period of this study were collected from the annual financial statements of the selected manufacturing companies. Gross domestic real growth rate, Central Bank of Nigeria (CBN) minimum re-discount rate (MRR), consumer price index, and stock market capitalization were collected from the Central Bank of Nigeria (CBN) website and Nigerian Stock Exchange fact book and daily stock report[3].

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[1]Refer to Appendix 1 for the list of companies used for this study.
[2]The researcher will be willing to share raw data of this study. Contact him on geumoren@yahoo.com

Table 3.3 below summarizes the definitions of variables, source of data and the respective acronym used in this study.

Table 1: Definition of variable used in the study

Variable Name	Definition and construction	Source	Acronym	Supported Literatures
Capital Structure	The first difference of the log of the ratio of long term debt to total asset at book value (total asset is the total of shareholders' fund and long term debt)	Financial Statement of the Companies	CAP	Rajan and Zingales (1995);Booth, Demirguc-Kunt and Maksimovic (2001); Bevan and Danbolt (2004),
GDP growth rate	The first difference in one period lag log level real GDP growth rate (old)	Central Bank of Nigeria (CBN)	GDP	Booth, Demirguc-Kunt and Maksimovic (2001); Dincergok and Yalciner (2011)
Inflation	Log level of one period lag of inflation	Central Bank of Nigeria	INF	Hatzinikolaou, Katsimbris, and Noulas, 2002; William 2011.
Interest Rate	The first difference in the one period lag log of Minimum rediscount rate.	Central Bank of Nigeria	INT	Antoniou, Guney, and Paudyal (2002)
Stock Market Development	The first difference in the one period lag log level of the ratio of total market capitalization and constant gross domestic product.	Data stream and Statistic South Africa	MARS	Demirguc-Kunt and Maksimovic (1996); Agrawal and Mahtadi, 2004

Note:
a.   *Logging of variables has the advantages of satisfying the CLM assumptions more closely than models use in level forms[4]*
b.   *Unit root test was conducted to ensure that the result that will obtain will not be spurious. Result of the test is presented in Appendix 3.*
c.   *For model (iii and iv) all the independent variables are lag (one period lag) and four period respectively.*

From the table above, the multiple regression model used to analyze data collected is presented below:

$$\gamma_t^k = \alpha + \beta.Z_t + \mu_t^k \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\quad i$$

More explicitly equation *(i)* above can be stated as:

$$\gamma_t^k = \alpha + \beta_1 GDP + \beta_2 INT + \beta_3 INF + \beta_4 MARS + \mu_t^k \ldots\ldots\ldots\ldots\ldots\ldots\ldots\; ii$$

This equation is to model the variables with no lag that is capital structure decision is assumed to be in the same period as the changes in the selected determinants.

$$\gamma_{t+1}^k = \alpha + \beta_1 GDP + \beta_2 INT + \beta_3 INF + \beta_4 MARS + \mu_{t+1}^k \ldots\ldots\ldots\ldots\; iii$$

$y_{t+1}^k = y_{t+1} + \cdots + y_{t+k}$ is CAP from period *t* to *t + k, Z$_t$* represents the selected macroeconomic variables (GDP, INT, INF and MARS) and u_{t+1}^k is the error term.

Similarly, the next consideration is to model, one year lag in decision making that is delay in making capital structure decision in one year. The model is presented below:

$$\gamma_{t+4}^k = \alpha + \beta_1 GDP + \beta_2 INT + \beta_3 INF + \beta_4 MARS + \mu_{t+4}^k \ldots\ldots\ldots\ldots\; iv$$

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[1]*Unit test result is presented in Appendix 3*

Generally, for the three equations, when $\beta = 0$, then variable Z_t cannot affect the capital structure decision of manufacturing companies in Nigeria, whilst when ($\beta \neq 0$) then Z_t is assumed to affect the capital structure decision of manufacturing companies in Nigeria.

Although the multiple regressions in equation (*i*), above is widely used in literatures, it possesses potential problems when evaluating relationship between variables. The problems are small sample bias (heteroscedasticity) and serial correlation of the variables (overlapping of the variable).

A common procedure of dealing with the above problems is the use of Newey and West (1987) standard errors (*t*-statistic is variables coefficient divided by standard error). The Newey and West standard errors are robust to serial correlation and heteroscedasticity in the error term (μ_{t+1}^k)

With this regard, the Newey and West standard errors and Bartlett Kerneltruncation parameter of [4■k] is used in this study, where [■] is the nearest integer function, when calculating the Newey and West (1987) standard errors to compute *t*-statistic.

Data Analysis
Descriptive Analyses
Table 2: Descriptive analyses of the data
*Note: * are in Billions. The result is from E-views*

	CAP	GDP (=N=)	INT	INF	MARS
Mean	18.22	152.00*	12.02	11.47	29.49
Median	16.23	142.00*	12.07	11.49	22.34
Maximum	35.00	284.00*	20.57	19.39	103.48
Minimum	6.50	96.70*	5.89	0.92	2.44
Standard Deviation	8.65	48.90	3.53	4.20	25.51
Skewness	0.32	0.82	0.29	-0.12	0.73
Kurtosis	1.75	2.80	2.88	2.67	2.71

Table 4.1 above presents the descriptive statistics of the dependent and independent variables. The mean, value of the total long term debt to total assets is 18.22 percent. This result shows that only 18.22 percent of manufacturing companies' finances was from long term debt, the remainder of 81.78 percent of the total assets was from other sources of financing.

The mean value of GDP, interest rate, inflation rate, and stock market size were N152.0 Billion, 12.2 percent, 11.47 percent and 29.49 percent respectively. GDP (gross domestic product with the effect of inflation) averaged at a low rate of N96.70 Billion. The low rate GDP discourages manufacturing companies from employing debt as a means of financing as the economy is not growing enough to absorb the excess production.

The interest rate which is measured using MRR averaged at 12.2 percent during the period of this study. This show that the average cost of debt for the period under review very high; a very high cost for the manufacturing companies and explained why the level of debts in their balance sheet was very low.

Inflation rate, measured by the percentage change in the consumer price index averaged 11.97 percent. This high inflation rate discourages bond investment including all other fixed interest debt holders compared with equity holders. High inflation reduces investment as the cost of debt will be very high, particularly long term debt required by manufacturing firms.

Stock market size is a measure of stock market development. Stock market size as measured by the ratio of market capitalization to real gross domestic product averaged 29.49 percent, which is considerably high. This high figure shows the very active nature of the Nigeria stock exchange and the ability of companies to easily mobilize funds, equity from the capital market.

All the above analyses clearly support the preference of manufacturing companies in Nigeria for equity financing instead of long term debt financing.

The same outcome was derived when analyzing the minimum and maximum value of the total long term debt to total assets of manufacturing companies in Nigeria for the period of this study. The calculated minimum value was 6.50 percent and the maximum value was 35 percent. These results reveal that manufacturing companies in Nigeria had equity in far excess of long term debt in the period of this study.

The next descriptive analysis is the correlation analysis CAP with all the selected determinants. Table 4.2 shows the result of the correlation analysis.

Table 3: Correlation analysis of capital structure and the determinants

	CAP	GDP	INF	INTSA	MARS
CAP	1				
GDP	0.897035	1			
INF	0.224049	0.020559	1		
INT	-0.435841	-0.429915	0.372366	1	
MARS	0.603154	0.621766	-0.2145	-0.551014	1

Source: E views output

From the table, CAP of the selected manufacturing companies shows a negative relationship with interest rate (with correlation of -0.44). Real gross domestic product growth rate, interest rate, inflation rate and stock market size all shows positive relationship with leverage.

GDP positive relationship with CAPS is the strongest with 0.897, followed byMARS with correlation of 0.603 percent. Inflation rate has the lowest correlation of 0.22. High positive correlation between variables signals multicollinearity, however, the use of the Newey and West standard error mitigates this near violation. Moreso, ordinal least square estimator is unbiased even when multicollinearity occurs (as it does not violate any classical least regression model assumption) Lutkepohi (2004).

The result suggests that an increase in interest rate will reduce the total long term debt of manufacturing companies. Moreso, increase in GDP and MARS will lead to increase in the total long term debt of manufacturing companies, since the variables show a positive relationship.
Invariably, the effect of an increase in GDP, interest rate and MARS will be significant to the total long term debt of the manufacturing companies; while INF will be insignificant.

Analyse of the Individual Determinant Effect on Capital Structure

This section present the result of the test conducted. The test was carried out using models specified in section 3. Level of significance used in the test was the 95 percent for a two-tailed test.

Result of the test is presented in the tables below:

Table 4: Summary of regression result from model 1 (no lag)

Variable	Coefficient	Std. Error	t-Statistic	Prob.	Decision
C	-0.007514	0.033912	-0.221589	0.8254	
GDP	0.038533	0.077959	0.494271	0.623	not significant
INT	0.087288	0.084956	1.027453	0.3085	not significant
INF	0.015587	0.013969	1.115843	0.2691	not significant
MARS	-0.100018	0.065094	-1.536531	0.1298	not significant

Source: E view output

Table 5: Summary of regression results from model 2 (one period lag of CAP)

Variable	Coefficient	Std. Error	t-Statistic	Prob.	Decision
C	-0.018422	0.026367	-0.698672	0.4876	
GDP	-0.152031	0.074287	-2.046538	0.0453	significant
INT	0.088268	0.065181	1.354206	0.181	not significant
INF	0.022808	0.012033	1.895451	0.0631	not significant
MARS	-0.120863	0.069678	-1.734602	0.0882	not significant

Source: E view output

Table 6: Summary of regression results from model 3 (one year lag of CAP)

Variable	Coefficient	Std. Error	t-Statistic	Prob.	Decision
C	10.00497	5.338449	1.874135	0.0662	
GDP	0.597823	7.195788	0.08308	0.9341	not significant
INT	-1.911131	15.40921	-0.124025	0.9017	not significant
INF	3.153294	2.24658	1.403597	0.1661	not significant
MARS	-2.823721	5.699487	-0.495434	0.6223	not significant

Source: E view output

I)   Gross Domestic Product (GDP)

The influence of GDP on capital structure decision was not noticed in model 1 and 3. However, in model 2 with one period lag, at 95 percent significance level (5 percent two tailed test), the critical value is t $\pm$ 1.96, and calculated t-statistics of -2.046. The general decision rule is to accept (or reject) the null hypotheses if the critical value of $\pm$ 1.96 is greater (or less) than the calculated value. From the table, the calculated value is greater than the critical value. The implication of this is that the increase in productivity level in Nigeria influences the manufacturing company's capital structure decisions in Nigeria. Similarly, the analysis of *t-statistic* supports the above conclusion.

ii) Interest Rate

The impact of interest rate on capital structure decision was not noticed in all the models as presented above, the p-values of interest rate is 30%, 18% and 90% respectively in the three models. The values are far above the 5 per cent significance level. Similar, interpretation can be made by comparing the critical value with the t-statistic.

iii) Inflation Rate

Similar to interest rate, inflation failed to show any influence on capital structure decision in the three independent periods - same period, one quarter lag and one year lag. From the three tables the p-values of inflation rate is27%, 6% and 16% respectively in the three models. The values are above the 5 per cent significance level.

iii) Stock Market Development

Stock market development also failed to indicate any influence on capital structure in the three periods.   From the three tables the p-values of inflation rate is 13%, 9% and 62% respectively in the three models. The values are above the 5 per cent significance level.

Similarly, the assessed coefficient of stock market development as measure by stock market size (MARS) is low and negative in the entire three models. This is a very weak coefficient, meaning that stock market size is not a strong determinant of manufacturing companies' capital structure decisions in Nigeria.

Interpretation of the Result

The above finding support the fact that capital structure decision is effective after one period of the announcement of any change in the macroeconomic variables, that is manufacturing companies in Nigeria are always very attentive to the policies of the government.

The study further confirmed that gross domestic product growth rate is in support of the studies conducted by Demirguc-Kunt and Maksimovic (1996), Muhammed (2003), and Gurcharan (2010), which concluded that gross domestic product affect capital structure decisions of manufacturing companies. However, the positive relationship of gross domestic products to leverage in this study contradicts the conclusion by Dincergok and Yalciner (2011).

The finding in relation to interest rate also supports result of the study conducted by Antoniou, Guney, and Paudyal (2002), Hatzinikolaou, Katsimbris, and Noulas (2002), Gurcharan (2010), and Williams (2011), who concluded that interest rate is not major determinant of capital structure decisions of listed companies in developing countries. The result that inflation does not significantly influences capital structure decisions of manufacturing companies in Nigeria, agrees with all the results of all the studies examined in this research. Studies by Antoniou, Guney, and Paudyal (2002), Hatzinikolaou, Katsimbris, and Noulas (2002), Muhammed (2003), Gurcharan (2010), and Williams (2011) all show negative relationships between inflation and capital structure.

Finally, the finding that stock market development does not significantly influences capital structure decisions of manufacturing companies in Nigerian is in line with conclusion from studies conducted by Demirguc-Kunt and Maksimovic (1996), Antoniou, Guney, and Paudyal (2002), and Bokpin and Isshaq (2008), whilst the only contradiction is from the study conducted by Dincergok and Yalciner (2011) which show that stock market development significantly influences capital stucture decisions of manufacturing companies.

Summary and Conclusion
Summary of the Study
The focus of this study has been on the evaluation of the effect of gross domestic product, interest rate, inflation and stock market development on the capital structure decisions of manufacturing companies in Nigeria, and the period of impact of the various macro-variables announcement.

There are two fundamental theories backing this study. The multiplier theory of macroeconomics, in which any change in a macro variable will affect all other variables and the economy. Another fundamental of this study are the different theories of capital structures which all cycle around the need to minimize cost and maximize the value of the company.

This study was motivated on one hand by the lack of literature on the use of macroeconomic variables as determinants of capital structure decision of companies, particularly when considering literatures within the context of Nigeria and on the other hand by the inconsistencies of the conclusion of various studies on macroeconomic determinant of capital structure decision.

Secondary data from 40 selected manufacturing companies and the selected macro variables were obtained from the financial statements of the companies, Central Bank of Nigeria (CBN) website, Nigeria Stock Exchange (NSE) weekly stock report in the stock exchange library. The collected data are descriptively analyzed using Newey and West standard errors.

To accomplish the objectives of the study, the selected macroeconomic variables were tested against capital structure under three period – same period, one period (quarter) after, and one year after the announcement of the changes in Macroeconomic variables. Book value of long term debt ratio as a measure of capital structure was used as a dependent variable. From the t-statistic and p-value of the regression obtained, it was observed that both gross domestic product significantly influence manufacturing company's capital decision making in Nigeria in one period (quarter) after the announcement of the new GDP figure.

All the other variables fails to show any significant relationship with capital structure in all the three periods of this review.

Conclusion and Recommendation
Capital structure decisions are very important for the survival of any company and the attainment of its objective. The ability of a manager to take effective and efficient capital structure decision determines the ability of the firm to achieve its operational objectives. Invariably, when the optimal capital structure is achieved, the possibility of profit maximization becomes visible. Attaining the optimal capital structure depends to a large extent on the ability of the financial manager to monitor and evaluate the various factors influencing capital structure. These factors are the determinants of capital structure decisions and are both internal (firm specific) and external (macroeconomic).

Several studies on the determinants of capital structure decisions mainly focus on firm specific determinants. This study goes further to examine the effect of macroeconomic variables on the capital structure decisions of manufacturing companies in Nigeria.

Based the review of relevant literatures on subject and analysis of data collected the objective of the study has been clearly achieved. The objective of the study was to examine the influence of macroeconomic decisions on the capital structure decisions of manufacturing companies and the actual period of the impact of such macro-variables changes on the capital structure decision. In conclusion, gross domestic product, interest rate, inflation and stock market development are macroeconomic determinants of capital structure decisions with various degrees of importance in all three periods. With only Gross Domestic Product being the most dominant determinant of capital structure decisions among manufacturing companies in Nigeria.

Finally, this study will recommend as follows:
1. Chief Executive Officers (CEOs) and Financial Managers of manufacturing companies in Nigeria should indepthly considered Gross Domestic Product (GDP) in making any capital structure decisions for their companies.
2. In considering GDP, they should employ my debt financing if GDP is expected to grow and equity if GDP is not expected to grow.

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Appendix
Appendix 1: Summary of selected empirical studies on capital structure decision

S/N	Author/s	SCOPE AND METHODOLOGY			RESULT	
		Statistical Method	Sample Industry	STUDY POPULATION	Positive	Negative
1	Toy, Stonehill, Remmers, Wright, and Beekhuisen (1974)	Ordinary Least Square.	Manufacturing Companies	Developed Countries	Debt Ratio, Asset Growth, Earning Variability	Earnings Rate
2	Nakamura and Nakamura (1982)	Panel Data Analyze	Manufacturing Companies	Developed Countries (Japan and USA)	Cost of Equity	Retained Earnings, Cost of Debt, Capital Productivity.
3	Lu (2007)	Multi Linear Cross Regression	Manufacturing Companies	China	Asset Tangibility, Firm Size, Age of Firm	Profitability and Non Tax Shield
4	Titman and Wessels (1988)	Structural Equation Modeling (SEM)	Manufacturing Companies	USA		Size, Profitability, (Tangibility, Financial Distress, Growth, Non Debt Tax Shied are not significantly related to leverage)
5	Rajan and Zingalas (1995)	Regression Analysis	Manufacturing Companies	Developed (G7 Countries)	Tangibility, Sale.	Market to Book Ratio, Profitability
6	Chang and Rhee (1990)	OLS	Real Sector	USA	Growth, Non Debt Tax Shield, Size, Earnings Variability	Profitability.
7	Muhammad (2003)	Pooled Time Series Regression	Manufacturing Companies	Japan, Malaysia, Pakistan	GDP, Sales,	Asset, Size, Profitability, Dividend Policy, Inflation
8	Dincergok and Yalciner (2011)	Regression	Manufacturing Companies	Turkey, Brazil, Argentina, and Indonesia	Tangibility,	Profitability
		Pooled Regression	Manufacturing Companies	Same	Stock Market Development	GDP Growth.
9	Iwarare and Akinleye (2010)	Chi Square	Banking Sector	Nigeria	Credit rating, Volatility of Earnings, Cash Flow, Financial distress, Transaction Costs, Financial Flexibility	

No	Author	Method	Sample	Country	Variables	Variables
10	Agrawal and Mandelker (1987)		Real Sector	Developing Country		Stock Market Development
			Banking	same	Stock Market Development	
11	Demirguc-Kunt and Maksimovic (1996)		Listed Companies	Developing Countries	Gross Domestic Product, Size	Stock Market Development
12	Hatzinikolaou, Katsimbris, and Noulas (2002)	Time Wise Auto-Regression Analysis	Listed Companies	USA		Inflation
13	Chen (2004)	Regression Analysis	Non-Financial Sector	China	Growth, Tangibility, Size	Profitability
14	Teker, Tasseven and Tukel (2009)	Panel Data Analysis	Manufacturing Companies	Turkey	Tangibility, Profitability	Size
15	Gurcharan (2010)	Ordinary Least Square Regression	Listed Companies	Philippine, Malaysia, Indonesia	GDP, Interest rate.	Inflation, Profitability, Growth.
16	Harris and Raviv (1991)	Ordinary Least Square Regression	Manufacturing Companies	Developed Countries	Tangibility, Non Debt Tax Shield, Firm Size, Growth	Financial Distress
17	Krishnan and Moyer (1996)	Regression Analysis	Manufacturing Companies	Developed (G7 Countries)	Profitability, Size, Growth.	
18	Chang, Lee, Lee, (2005)	Multiple Indicators Multiple causes	Manufacturing Companies	Developed Countries	Growth, Profitability, Collateral Value	Uniqueness (No Relations), Non Debt Tax Shield, Volatility
19	Huang and Song, (2011)	Regression	Listed Companies	China	Size, Non Debt Tax Shield, Fixed Asset, Volatility	Profitability
20	Williams (2011)	Augmented Dickey-Fuller (ADF) Test	Banking Sector	Nigeria	Real Exchange rate, Demand Deposits, Money Supply, Return on Investment.	Inflation, Political Instability,
21	Buyuksalvarci and Abdioglu (2011)	Panel Data Analysis	Banking Sector	Turkey	Loan Loss Reserve, Return on Asset	Loan, Return on Equity, Leverage. (Size, Deposits, Liquidity, and Net interest margin – No relationship)
22	Bokpin and Isshaq (2008)	ARIMA Model	Listed Companies	Ghana		Stock Market Development.
23	Lim (2012)	Multiple Linear regression	Financial Services Firms	China (Developed Country)	Firm Size	Profitability, Firm Size, Non-debt tax shields, Earnings Volatility and Non-circulating shares (have Significant Influences)
24	Tian, Qian, and Wirjanto (2007)	Panel Data Analysis	Listed Companies	China	Firm size, Tangibility and Ownership Structure	Profitability, Non-debt tax shields, Growth and Volatility
25	Antoniou, Guney, and Paudyal (2002)	Panel Data and GLS	Listed Companies	Developed Countries	Target Debt Ratio, Size, Share price performance	Inflation Rate, Profitability, Tangibility (Mixed Result), Liquidity and Volatility (insignificant relationship)

Appendix 2: List of Companies selected for the study

Industry	Population Size	Number Selected	Percentage Selcted(%)	Company Selcteed	Listing Date (m/y)
Agricultural and Agro Allied Products	7	2	29	Okomu Oil Palm Coy PLC	Mar-91
				Presco Plc	Oct-98
Apparel and Footwear	1	0	-	nil	
Autobile and Auto Spare parts	1	0		nil	
Breweries	8	4	50	Golden Guinea Breweries PLc	Jan-79
				Guiness Nig PLC	Nov-65
				International Breweries PLC	Apr-95
				Nigerian Breweries PLC	Sep-73
Building Materials	10	6	60	Ashaka Cement PLC	Nov-90
				Benue Cement PLC	Apr-91
				Lafarge Cement Wapco Nig PLC	Feb-79
				Nigeria Ropes Plc	Apr-79
				Cement Comp of Northern Nig	Oct-93
				Nigeria Wires Industires Plc	Apr-78
Chimicals and Paints	9	5	56	African Paints Nig PLC	Jul-96
				DN Meyer PLC	Jan-79
				Nigerian German Chemicals PLC	Aug-79
				IPWA PLC	Nov-78
				Premier Paints Plc	Apr-95
Conglomerates	3	3	100	UAC of Nig PLC	Aug-74
				Chellaram Nig PLC	Apr-77
				PZ Cussons Nig PLC	Jan-74
Food/Beverages and Tobbaco	15	9	60	7 UP Bottling Nig PLC	Feb-86
				Unilever Nig PLC	Sep-73
				Flour Mills of Nig PLC	Aug-79
				National Salt Company of Nig PLC	Oct-92
				Nestle Nig PLC	Apr-79
				NBC PLC	Nov-73
				P. S. Mandrides PLC	Feb-79
				Cadbury Nig PLC	Jun-76
				UTC Nig PLC	Jan-72
Healthcare	5	4	80%	Glaxosmithkline Coy Nig PLC	Jul-79
				May and Baker Nig PLC	Nov-94
				Neitmeth Int Pharm PLC	Sep-79
				Pharma Deko PLC	Aug-79
Industrial/Demestic Products	15	6	40%	Aluminum Extrusion Industries PLC	Apr-86
				Alumaco PLC	Jul-72
				BOC Gases Nig PLC	Jan-79
				First Aluminum Nig PLC	Nov-92
				Vita Foam Nig PLC	Nov-78
				Vono Products Nig PLC	Apr-74
Textiles	5	1	20%	United Nigeria Textiles PLC	Dec-71
Total	79	40	0.51		

Appendix 3: Unit root test result

Variables	Level			First difference		
	ADF		*PP*	*ADF*		*PP*
	AIC	SIC	NWA	AIC	SIC	NWA
$LogCAP_{t+1}$	0.5475	0.5475	0.6866	0.0002	0.0002	0.0001
log GDP	1.0000	1.0000	0.8495	0.0000	0.0000	0.0000
logINF	0.0021	0.0021	0.0596*			
logINT	0.2791	0.2791	0.3948	0.0004	0.0004	0.0004
log MARS*	0.4335	0.4022	0.6492	0.1008	0.0956	0.0000

Note: *The null hypothesis in the Augmented Dickey-Fuller (ADF) and Phillip- Perron (PP) tests are that the variable has unit root. The optimal lag length of the ADF test is selected based on the Akaike information criterion (AIC) and the Schwarz criterion, while for the Phillip-Perron test is the Newey West Automatic (NWA) criterion. The P - value is used in selecting the null, in which it is compare with the 0.05 significance level (* is 0.10 significance level). The null is rejected when the p-value is lower than the selected significance level.*