

## Effects of Capital Structure on Financial Performance of Food and Beverage Companies in Nigeria (2007-2016)

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**Abstract:** *The study examined effects of capital structure on financial performance of listed food and beverage companies in Nigeria. It specifically looked at the effects of short-term debt, long term debt and leverage on profitability of food and beverage companies in Nigeria from 2007 to 2016. Secondary data were collected from published financial statements of the five listed food and beverage companies in Nigeria. The study adopted ex-post facto research design in its methodology. Multiple regression analysis was employed with the aid of E-view statistical package. The study found that short term debt had a significant and positive effect on return on equity as a measure of corporate performance, among others. The implication of the findings is that the more borrowed funds these companies employ, the more interferences they will have on their ROE. It was concluded that short and long term debts have significant and positive effects on financial performance of food and beverage companies in Nigeria. It is recommended that companies should use equity financing as a first-line approach in their business activities.*

**Keywords:** *Capital structure, short term debt, long term debt, leverage, Nigeria.*

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### 1.0 Introduction

It is presumed that an organization with a strong capital base may have better returns and value. Some commonly believe that a better mixture of an organization's capital is the oil that lubricates its performance and growth. However today, apart from investment decision, capital structure decision has become one of the important financial decisions of business organizations. This is because it has a long-term financial impact on its operations specifically on return maximization and value of the company. A company can issue a large amount of debt or a large amount of equity. Hence, it is important for a company to deploy the appropriate mix of debt and equity that can maximize its overall market value (Modigliani & Miller, 1958).

Financing is one of the crucial areas in a company. A financing manager is concerned with the determination of the best financing mixture and combination of debts and equity for his company. Financial constraints have been a major factor affecting corporate companies' performance in developing countries especially Nigeria (Alfred, 2007). The basis for the determination of optimal capital structure of corporate sectors in Nigeria is the widening and deepening of various financial markets. Mainly, the corporate sector is characterized by a large

number of companies operating in a largely deregulated and increasingly competitive environment. Since 1987, financial liberalization has changed the operating environment of companies, by giving more flexibility to the Nigerian financial managers in choosing their company's capital structure (Alfred, 2007).

Capon, Farley and Hoeing (1990) as cited by Bala and Matthew (2005) suggest that performance of companies can be explained by various characteristics that could be company or industry specific. Consequently, certain factors are likely to either improve or impair a company's performance. It therefore, means that poor performance of some companies may not entirely be the managers' fault. For a fair assessment of a company's performance, a holistic examination of strategies, techniques and business tools available to the company needs to be done. An obvious consequence of high company performance is increase in the company's stock market prices which will make investors to respond positively.

Udeh and Igwe (2013) state that low-g geared companies stand a better chance in terms of return on capital employed in comparison with high-g geared companies. At least, interest payment to providers of fund is expected to be higher in the latter companies. This invariably goes a long way to affect available profit and the performance of the company in the perception of the fund providers. As true as this may sound, others believe that managers of high-g geared companies operate with such unimaginable dexterity that keeps them on their toes all year round in order to impress providers of fund. This may sometimes lead to unexpected high level of performance (Udeh & Igwe, 2013).

Furthermore, an intriguing question that needs to be addressed is whether short and long term debts have the same effect on overall performance of food and beverage companies in Nigeria. Previous studies in this field appear to have ended with contradictory results.

It is therefore in mist of the above arguments that this paper is designed to examine the effect of different mix of capital structure on the performance of food and beverage industries in Nigeria.

### **1.2 Statement of the problem**

Different financial managers have their belief concerning the role of capital structure in organizations. While some hold the opinion that it is better to have more of short term debts, others believe it is more beneficial to run corporate organizations with long term debts. Yet, another group advocates a balanced mixture of the two in organizations to optimize corporate performance and ensure that providers of fund have the best of return on their capital employed. It is argued that risk averse managers appear more comfortable with short term debts. This is simply because it reduces their exposure to risk. On the other hand, managers who are traditional risk takers prefer to operate with long term debts which will allow them enough time for new business exploits. Third group believes that moderation is the secret of success in life. The polarization of ideas of financial managers along these major lines is an invitation to more empirical studies in this area. Furthermore, conflicting results from studies on this subject matter, especially in the recent times, have made arguments in this area inconclusive and consequently necessitated more researches. The actual impact of capital structure on corporate performance in Nigeria has been a major area of controversy among researchers.

The work of Babalola (2014) which was in concert with the dominant corporate finance paradigm, revealed that capital structure choice is a trade-off between the costs and benefits of debt. He argues that this submission has been refuted on the grounds that large companies are more inclined to retain higher performance than middle companies under the same level debt ratio. There are no clear evidences that higher performances of large companies are solely

attributable to their financial structure. It is also not known whether the existing differences in performance measures and other traditional economic factors internal to the firms that have been disregarded all along would translate into factors that could impact performance. These are among the factors that continue to agitate enquires in this field. From the foregoing, the problem of this study is encapsulated in the question: To what extent does short and long term debts as well as leverage influence financial performance of listed food and beverage companies in Nigeria.

### **1.3 Objectives of the study**

The overall objective of the study is to find out the effect of capital structure on financial performance of food and beverage companies in Nigeria.

The specific objectives are to;

- i. Examine the effect of short-term debt on profitability of listed food and beverage companies in Nigeria.
- ii. Examine the effect of long-term debt on profitability of listed food and beverage companies in Nigeria.
- iii. Examine the effect of leverage on profitability of listed food and beverages companies in Nigeria.

### **1.4 Research questions**

The following research questions guided the study:

- i. To what extent does short term debt affect profitability of listed food and beverage companies in Nigeria?
- ii. To what extent does long term debt affect profitability of listed food and beverage companies in Nigeria?
- iii. To what extent does leverage affect profitability of listed food and beverage companies in Nigeria?

### **1.5 Hypotheses of the study**

Based on the above objectives, the following hypotheses were formulated:

H01: Short term debt has no significant impact on profitability of listed food and beverage companies in Nigeria.

H02: Long term debt has no significant impact on profitability of listed food and beverage companies in Nigeria.

H03: Leverage has no significant impact on profitability of listed food and beverage companies in Nigeria.

### **1.6 Scope of the study**

The study covered the effect of short and long term debts as well as leverage on profitability of food and beverage companies in Nigeria. The period of study is 10 years (2007- 2016).

## **2.0 Review of Related Literature**

### **2.1 Conceptual Review**

The term capital structure according to Kennon (2010) refers to the percentage of capital (money) at work in a business by type. Pandey (1999) differentiated between capital structure and financial structure of a company by affirming that the various means used to raise funds represent the financial structure, while the capital structure represents the proportionate relationship between long-term debt and equity. The capital structure of a company as discussed by Inanga and Ajayi (1999) does not include short-term credit, but means the composite of a company's long-term funds obtained from various sources. Therefore, a company's capital structure is described as the capital mix of both equity and debt capital in financing its assets. However, whether or not an optimal capital structure exists is one of the most important and complex issues in corporate finance. Capital structure is the combination or mixture of company's equity and debt, which ensures financial stability, profit generation, growth and expansion.

Abor (2005) views the capital structure of a company as the precise mixture of debt and equity use in financing the company's operations. Capital structure means the approach a company uses in financing their assets through the mixture of debt, equity or hybrid securities (Saad, 2010). Hybrid securities, in this context, mean a group of securities that combine the elements of both debt and equity, which have fixed or floating rate of return, and the holder has the option of converting it into the underlying company's share. Capital structure is a mixture of a company's debts (long-term and short-term), common equity and preferred equity (San & Heng, 2011).

Capital structure is the combination of the debt and equity structure of a company. It can also be referred to as the way a corporation finances its assets through some combination of equity, debt or hybrid securities; that is the combination of both equity and debt. A company's capital structure is then the composition of its liabilities. The various components of a company's capital structure according to Inanga and Ajayi (1999), may be classified into equity capital, preference capital and long-term loan (debt) capital. They refer to equity capital as the contributed capital; money originally invested in the business in exchange for shares of stock; and retained profits; profits from past years that have been kept by the company to strengthen the balance sheet, growth, acquisition and expansion of the business. Inanga and Ajayi (1999) see preference capital as a hybrid that combines the features of debentures and equity shares except the benefits while debt capital refers to the long term debt used by the company in financing its investment decisions while coming up with its principal and also paying back interest.

Profitability is expressed in terms of several popular numbers that measure one of the two generic types of performance: how much they make it with what they have got and how much they make from what they take in. It is a measure of the amount by which a company's revenue exceeds its relevant expenses (Inanga & Ajayi, 1999).

Return on equity measures the rate of return on the ownership interest (shareholders' equity) of the common stock owners. It measures the company's efficiency at generating profit from every unit of shareholder's equity (Inanga & Ajayi, 1999).

Leverage is that part of capital structure used to finance the activities of company, most times referred to as debt. Aliu (2010) defines leverage as the sensitivity of the value of equity ownership with respect to changes to the underlying company value. That is, company's mix of its financial liabilities. Sumit (1997) refers to leverage as debt equity and reports that the greater

the amount of debt, the more stringent is the monitoring of managers and therefore company's performance will be superior. According to Champion (1999), the use of leverage is one way to improve the performance of the company. Consequently, it reflects the debt amount used in the capital structure of the company.

## **2.2 Theoretical Review**

### **Pecking Order Theory**

The pecking order theory of capital structure as introduced by Donaldson (1961) is among the most influential theories of corporate leverage. It goes contrary to the idea of companies having a unique combination of debt and equity finance, which minimizes their cost of capital. The theory suggests that when a company is looking for ways to finance its long-term investments, it has a well-defined order of preference with respect to the sources of finance it uses. It states that a company's first preference should be the utilization of internal funds (i.e. retained earnings), followed by debt and then external equity. He argues that the more profitable, the lesser they borrow because they would have sufficient internal finance to undertake their investment projects.

He further argues that it is when the internal finance is inadequate that a company should source for external finance and most preferably bank borrowings or corporate bonds. After exhausting both internal and bank borrowing and corporate bonds, the final and least preferred source of finance is to issue new equity capital. Pecking order theory tries to capture the costs of asymmetric information which states that companies prioritize their sources of financing (from internal financing to equity) according to the principle of least effort, or of least resistance, preferring to raise equity as a financing means of last resort. Hence, internal funds are used first, and when that is exhausted, debt is issued, and when it is not sensible to issue any more debt, equity is issued.

On the other hand, modification of pecking order theory by Myers and Majluf (1984) captures the effect of asymmetric information upon the mispricing of new securities, which says that there is no well-defined target debt ratio. They opine that investors generally perceive that managers are better informed of the price sensitive information of the companies. Investors' perception is such that managers issue risky securities when they are overpriced. This perception of investors leads to underpricing of new equity issue. Sometimes, this underpricing becomes so severe that it causes substantial loss to the existing shareholders. To avoid the problem arising from information asymmetry, companies usually fulfill their financing needs by preferring retained earnings as their main source of financing, followed by debt and finally external equity financing as the last resort. This study is anchored on pecking order theory because it captures all the necessary aspects of capital structure of corporate organizations.

## **2.3 Empirical Review**

Babalola (2014) in a study of 31 manufacturing firms with audited financial statements for a period of fourteen years (1999-2012) from static trade-off point of view, employed the triangulation analysis and the study revealed that capital structure is a trade-off between the costs and benefits of debt and the large firms are more inclined to retain higher performance than middle firms under the same level debt ratio.

Akinyomi (2013) studied three manufacturing companies selected randomly from the food and beverage categories for a period of five years (2007-2011) with aid of static trade-off. He adopted the use of correlation analysis method and the result revealed that each of debt to capital, debt to common equity, short term debt to total debt and the age of the firm is

significantly and positively related to return on asset and return on equity but long term debt to capital is significantly and negatively related to return on asset and return on equity. He further found a significant relationship between capital structure and financial performance through the use of return on asset and return on equity.

Bassey, Aniekan, Ikpe and Udo (2013) examined 60 unquoted agro-based companies in Nigeria for a period of six years. They employed the ordinary least square regression and descriptive statistics. Their study revealed that only growth and educational level of company owners were significant determinants of both long and short term debt ratios. Assets structure, age of the companies, gender of owners and export status were found to have impacted significantly on long term debt ratios while business risk, size and profitability of companies were major determinants of short term debt ratio for the companies under investigation.

Chandrasekharan (2012) conducted a study using 87 firms out of a population of 216 firms listed on the Nigeria Stock Exchange for a period of five years (2007-2011). He employed panel multiple regression analysis and the study revealed that firm size, growth and age are significant with the debt ratio of the firm whereas profitability and tangibility are not.

Simon-Oke and Afolabi (2011) in a study of five quoted companies within a period of nine years (1999-2007) employed the panel data regression model. The result of their study showed a positive relationship between company's performance and equity financing as well as debt-equity ratio. It also showed a negative relationship between company's performance and debt financing due to high cost of borrowing in the country.

In Pakistan, Abdul (2010) studied 36 engineering sector companies listed on the Karachi Stock Exchange (KSE) during the period 2003-2009. He applied pooled ordinary least square regression and the results showed that financial leverage measured by short term debt to total assets (STDTA) and total debt to total assets (TDTA) has a significant negative relationship with the company's performance measured by Return on Assets (ROA), Gross Profit Margin (GM) and Tobin's Q. The relationship between financial leverage and company's performance measured by the return on equity (ROE) is negative but insignificant. Asset size has an insignificant relationship with the company's performance measured by ROA and GM but negative and significant relationship exists with Tobin's Q. Companies in the engineering sector of Pakistan are largely dependent on short term debts that are attached with strong covenants which affect the performance of the companies.

Semiu and Collins (2011) used a sample size of 150 respondents and 90 firms selected for primary data and secondary data respectively for a period of five years (2005-2009). They employed the descriptive statistics and Chi square analysis. They found that a significant and positive relationship exist between a firm's choice of capital structure and its market value in Nigeria.

Ong and Teh (2011) investigated effect of capital structure on firms' performance of construction companies in Malaysia for a period of four years (2005-2008). Long term debt to capital, debt to asset, debt to equity market value, debt to common equity, long term debt to common equity were used as proxies for capital structure while returns on capital, return on equity, earnings per share, operating margin, net margin were used to proxy the corporate performance. The result showed that a relationship between capital structure and corporate performance in Malaysia.

Khalaf (2013) used a sample of 45 manufacturing companies listed on the Amman Stock Exchange for his study that spanned over a period of five (5) years, from 2005-2009. Multiple regression analysis was applied on performance indicators such as Return on Asset (ROA) and

Profit Margin (PM) while Short-term debt to Total assets (STDTA), Long term debt to Total assets (LTDTA) and Total debt to Equity (TDE) were used as capital structure variables. The results showed insignificant and negative relationship between STDTA and LTDTA, and ROA and PM while TDE was positively related with ROA and negatively related with PM. However, STDTA was significant using ROA while LTDTA was also significant using PM.

**3.0 Methodology**

This study adopted the use of *ex-post facto* research design in examining the effect of company performance of listed food and beverage companies in Nigeria. Secondary data for long term debt, short term debt and leverage were sourced from published annual reports of companies concerned. The five food and beverage companies quoted on the floor of the Nigeria Stock Exchange were used as the sample size. These companies include: Nestle Plc, 7up Bottling Company Plc, Cadbury Plc, Dangote Flour Mills of Nigeria Plc and National Salt (NASCON). The study employed multiple regressions represented by the following equation:

$$PROFIT_{it} = f(1STD_{it}, 2LTD_{it}, 3Lit)$$

Where: - PROFIT<sub>it</sub> (STD) =total short term debt.

(LTD) =total long term debt.

(L) = leverage.

The independent variables for this study are short term debt measured as total short debt to total debt, long term debt measured as total long term debt to total debt while company leverage is the total debt to total assets. The dependent variable is the return on equity (ROE) of the companies.

**4.0 Results and Discussion**

**Table 1:** Description of the Characteristics of the Variables under Study for the pooled data of the companies

	LROE	LSTD	LLTD	LLEV
Skewness	0.347992	-1.744563	-0.201068	-0.464590
Kurtosis	2.114044	7.882290	1.758263	3.012835
Jarque-Bera	2.644400	75.02241	3.549218	1.799045
Probability	0.266548	0.000000	0.169550	0.406764
Observations	50	50	50	50

Source: Authors’ computation from E-view 9.0

Table 1 contains the description of the variables using normality test which comprises of Skewness, Kurtosis and Jarque – Bera Statistics. The table shows that the log of return on equity is positively skewed while the logs of short term debt, long term debt and leverage are negatively skewed.

It was also shown from the table that the logs of return on equity and long term debts platykurtic as the values of their kurtosis are all less than three while the logs of short term debt and leverage are leptokurtic as their kurtosis values are greater than three. Furthermore, the table shows that the logs of return on equity, long term debt and leverage do not have normal distribution as the probability values of their Jarque –Bera statistics are greater

than 0.05 while the log of short term debt is normally distributed as its probability value is less than 0.05.

**Table 2: Pooled Unit Root Test Results**

Variable	LLC		ADF – FISHER		PP – FISHER	
	Test Stat.	Order of integration	Test Stat.	Order of integration	Test Stat.	Order of integration
LROE	-6.38 (0.0000 < 0.05)	I(0)	33.63 (0.0002 < 0.05)	I(0)	48.53 (0.0000 < 0.05)	I(0)
LSTD	-9.70 (0.0000 < 0.05)	I(0)	19.81 (0.0311 < 0.05)	I(0)	28.25 (0.0016 < 0.05)	I(0)
LLTD	-9.84 (0.0000 < 0.05)	I(0)	22.60 (0.0123 < 0.05)	I(0)	32.58 (0.0003 < 0.05)	I(0)
LLEV	-4.80 (0.0000 < 0.05)	I(1)	30.72 (0.0007 < 0.05)	I(1)	66.58 (0.0000 < 0.05)	I(1)

Source: Authors’ compilation from E-view 9.0

LLC = Levin, Lin and Chu Test

IPS = Im, Pesaran and Shin W – Stat

ADF FISHER = Augmented Dickey Fuller Fisher Chi – Square Test

PP FISHER = Philip Peron Fisher Chi – Square Test

Table 2 shows that the logs of return on equity, short term debt and long term debt are stationary at level or integrated at order zero while the log of leverage is integrated at order one.

**Table 3: Results of Panel Regression**

Dependent Variable: LROE  
 Method: Panel Least Squares  
 Date: 01/31/19 Time: 05:55  
 Sample: 1 50  
 Periods included: 11  
 Cross-sections included: 5  
 Total panel (unbalanced) observations: 50

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	11.17614	2.362459	4.730723	0.0000
LSTD	-0.077490	0.116046	-0.667754	0.5076
LLTD	0.494810	0.091446	5.410956	0.0000
LLEV	-0.119331	0.114325	-1.043794	0.3020
R-squared	0.908487	Mean dependent var		15.47841
Adjusted R-squared	0.869910	S.D. dependent var		0.981111
S.E. of regression	0.778789	Akaike info criterion		2.414464
Sum squared resid	27.89953	Schwarz criterion		2.567426
Log likelihood	-56.36160	Hannan-Quinn criter.		2.472713
F-statistic	10.58888	Durbin-Watson stat		1.696493
Prob(F-statistic)	0.000021			

Source: Authors’ computation from E-view 9.0

Table 3 shows that the  $R^2$  is 0.908487 which is about 91%. This implies that about 91% change in return on equity is explained by the independent variables and the higher the  $R^2$ , the better fit the independent variables. Since the F – statistics is 10.58888 which is greater than 2.5 and the probability value, 0.000021 is less than 0.05, it shows that the model is significant and has a high goodness of fit. Again, the Durbin –Watson Statistics is 1.696493, which is approximately equal to 2, it shows there is no auto correlation.

**Test of Hypotheses**

**Hypothesis one:** Short term debt does not have significant and positive effect on profitability of listed food and beverage companies in Nigeria

**Table 4: Result of Test of Hypothesis One**

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	11.17614	2.362459	4.730723	0.0000
LSTD	-0.077490	0.116046	-0.667754	0.5076

Source: Authors’ computation from E-View 9.0

Table 4 shows the t-statistics of the log of short term debt as  $-0.667754 < 2.5$  with a probability of the t-statistics of  $0.5076 > 0.05$ . We accept the null hypothesis ( $H_0$ ) and conclude that short term debt does not have significant and positive effect on profitability of listed food and beverage companies in Nigeria.

**Hypothesis Two:** Long term debt does not have significant and positive effect on profitability of listed food and beverage companies in Nigeria.

**Table 5: Result of Test of Hypothesis Two**

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	11.17614	2.362459	4.730723	0.0000
LLTD	0.494810	0.091446	5.410956	0.0000

Source: Authors’ computation from E-View 9.0

Table 5 shows that the t-statistics of the log of long term debt is  $5.410956 > 2.5$  with a probability of t-statistics of  $0.0000 < 0.05$ . We reject the null hypothesis ( $H_0$ ) and conclude that long term

debt has significant and positive effect on profitability of listed food and beverage companies in Nigeria.

**Hypothesis Three:** Leverage does not have significant and positive effect on profitability of listed food and beverages companies in Nigeria.

**Table 6: Result of Test of Hypothesis Three**

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	11.17614	2.362459	4.730723	0.0000
LLEV	-0.119331	0.114325	-1.043794	0.3020

Source: Authors' computation from E-View 9.0

Table 6 shows the t-statistics of the log of leverage as  $-1.043794 < 2.5$  with a probability of the t-statistics of  $0.3020 > 0.05$ . We therefore accept the null hypothesis (H0) and conclude that leverage does not have significant and positive effect on profitability of listed food and beverages companies in Nigeria.

The study discovered that short term debt does not have significant and positive effect on profitability of listed food and beverage companies in Nigeria due to the fact that the t-statistics of the log of short term debt which was  $-0.667754$  was less than 2.5 while the probability value of 0.5076 was greater than 0.05. This finding agrees with that of Khalaf (2013) that there is a negative and insignificant relationship between short-term debt to total assets (STDTA) and ROA. However, the finding is in contradiction to that of Akinyomi (2013) who found a significant relationship between capital structure and financial performance through ROA and ROE. Again, the discovery made by this study that long term debt has significant and positive effect on profitability of listed food and beverage companies in Nigeria is in agreement with the findings of Semiu and Collins (2011) as well as Ong and Teh (2011) that a positively significant relationship exists between a firm's choice of capital structure and its market value in Nigeria.

Furthermore, the study found that leverage does not have significant and positive effect on profitability of listed food and beverage companies in Nigeria. This finding is in consonance with the results of Abdul (2010) that the relationship between financial leverage and company performance measured by the return on equity (ROE) is negative but insignificant. On the other hand, this finding negates the submission of Simon-Oke and Afolabi (2011) that a positive relationship exists between companies' performance and equity financing and debt-equity ratio.

## **5.0 Conclusion and Recommendations**

The study concludes that short term and long-term debts are significant while leverage is insignificant in explaining financial capital structure decisions in Nigeria. This has far-reaching implications for financial managers in corporate firms in the country.

In view of the above, the following recommendations are offered:

1. Short-term debts in food and beverage companies in Nigeria should be applied to short term business proposals to maximize their significance in capital structure decisions which has the tendency to affect their ROE. These companies should rely more on equity financing.
2. Similarly, long term debts should be applied to long term business plans of the food and beverage firms in Nigeria to maximize their earning potentials as well as generate reasonable utility for the debt. Again, equity financing should be the first line approach.

3. Food and beverage companies in Nigeria should approach leverage of with extreme caution. The insignificant nature of leverage could be tempting to financial managers which may create lopsidedness in the capital structure of firms with its undesirable consequences.

### **6.0 Suggestions For Further Studies**

The following areas are suggested for further studies:

- a. A similar study should be conducted with non-financial variables of corporate performance in Nigeria.
- b. A comparative study of different sectors of the economy should be conducted with both financial and non-financial variables of performance in Nigeria.

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**APPENDIX 1: RESULTS OF ANALYSIS**

**Output of Descriptive Statistics**

	LROE	LSTD	LLTD	LLEV
Mean	15.47841	16.44625	15.31543	16.77298
Median	15.20449	16.58882	15.56798	16.82865
Maximum	17.48739	17.90538	17.35297	18.59644
Minimum	13.80623	12.00555	12.75390	13.90153
Std. Dev.	0.981111	1.036736	1.380669	1.033170
Skewness	0.347992	-1.744563	-0.201068	-0.464590
Kurtosis	2.114044	7.882290	1.758263	3.012835
Jarque-Bera	2.644400	75.02241	3.549218	1.799045
Probability	0.266548	0.000000	0.169550	0.406764
Sum	773.9205	822.3123	765.7714	838.6490
Sum Sq. Dev.	47.16636	52.66622	93.40605	52.30457
Observations	50	50	50	50

Source: E-view 9.0

**Output of Unit Root Test**

**Unit Root Test for Log of Leverage**

Panel unit root test: Summary  
 Series: D(LLEV)  
 Date: 01/31/19 Time: 01:16  
 Sample: 1 50  
 Exogenous variables: None  
 User-specified lags: 1  
 Newey-West automatic bandwidth selection and Bartlett kernel  
 Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-4.79561	0.0000	5	35

Null: Unit root (assumes individual unit root process)

Method	Statistic	Prob.**	Cross-sections	Obs
ADF - Fisher Chi-square	30.7199	0.0007	5	35
PP - Fisher Chi-square	66.5754	0.0000	5	40

\*\* Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality

### Unit Root Test for Log of Return on Equity

Panel unit root test: Summary

Series: LROE

Date: 01/31/19 Time: 01:18

Sample: 1 50

Exogenous variables: Individual effects, individual linear trends

User-specified lags: 1

Newey-West automatic bandwidth selection and Bartlett kernel

Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-6.38241	0.0000	5	40
Breitung t-stat	1.51275	0.9348	5	35

Null: Unit root (assumes individual unit root process)

Im, Pesaran and Shin W-stat	-1.96387	0.0248	5	40
ADF - Fisher Chi-square	33.6318	0.0002	5	40
PP - Fisher Chi-square	48.5328	0.0000	5	45

\*\* Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality.

### Unit Root Test for Log of Short Term Debt

Panel unit root test: Summary

Series: LSTD

Date: 01/31/19 Time: 01:19

Sample: 1 50

Exogenous variables: Individual effects, individual linear trends

User-specified lags: 1

Newey-West automatic bandwidth selection and Bartlett kernel

Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-9.70246	0.0000	5	40
Breitung t-stat	-0.90588	0.1825	5	35

Null: Unit root (assumes individual unit root process)

Im, Pesaran and Shin W-stat	-0.96632	0.1669	5	40
ADF - Fisher Chi-square	19.8137	0.0311	5	40
PP - Fisher Chi-square	28.2456	0.0016	5	45

\*\* Probabilities for Fisher tests are computed using an asymptotic Chi

-square distribution. All other tests assume asymptotic normality.

**Unit Root Test for Log of Long Term Debt**

Panel unit root test: Summary

Series: LLTD

Date: 01/31/19 Time: 01:24

Sample: 1 50

Exogenous variables: Individual effects, individual linear trends

User-specified lags: 1

Newey-West automatic bandwidth selection and Bartlett kernel

Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-9.84173	0.0000	5	40
Breitung t-stat	-1.62529	0.0521	5	35
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-1.26802	0.1024	5	40
ADF - Fisher Chi-square	22.5982	0.0123	5	40
PP - Fisher Chi-square	32.5839	0.0003	5	45

\*\* Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality.

**APPENDIX 2: POOLED DATA OF NC, 7UP COMPANY, DANGOTE, NESTLE AND CADBURY**

	ROE	STD	LTD	LEV
NC - 2007	3443211	34890655	1009342	8980342
NC - 2008	1999200	23434575	1344680	7890565
NC - 2009	1345877	34702300	345900	8700344
NC - 2010	3002112	37660780	675900	6789400
NC - 2011	1648321	2024216	729093	7509792
NC - 2012	2203695	3554604	827782	10046942
NC - 2013	2766306	3377126	734839	10689544
NC - 2014	2699542	3806716	731825	11431167
NC - 2015	1867039	5346115	902464	12623748
NC - 2016	3867534	4578543	803765	11636643
7UP COMPANY - 2007	2345754	25343567	789550	1089823
7UP COMPANY - 2008	990765	21567900	653890	11232560
7UP COMPANY - 2009	6544890	23456789	890766	9088766
7UP COMPANY - 2010	3245670	27457125	875432	10200550
7UP COMPANY - 2011	1678471	29670126	8507941	48485662
7UP COMPANY - 2012	2856504	27862495	10929695	51370170
7UP COMPANY - 2013	6434601	29867824	8666690	55863209
7UP COMPANY - 2014	7125788	32423653	11329555	67686839
7UP COMPANY - 2015	3347463	34656603	8360414	67796611
7UP COMPANY - 2016	2345780	35432720	9001700	61234654
DANGOTE - 2007	39325933	5542475	11338000	12562000
DANGOTE - 2008	36776266	5936184	10992000	12856601
DANGOTE - 2009	5433780	5510374	8895000	11345709
DANGOTE - 2010	6780990	5910930	9880000	23450900
DANGOTE - 2011	3138119	9613645	10524375	22714473

DANGOTE - 2012	4480648	3539667	9646302	18233825
DANGOTE - 2013	4159302	163661	504448	14074523
DANGOTE - 2014	14078794	16246192	999908	45689008
DANGOTE - 2015	12110356	13677869	5860194	28794277
DANGOTE - 2016	10890760	12543780	6890555	17890655
NESTLE - 2007	11288062	11890800	27862495	3347463
NESTLE - 2008	12659855	34890760	29867824	7125788
NESTLE - 2009	13908000	32567800	29670126	2856504
NESTLE - 2010	23560900	43789005	32423653	1978471
NESTLE - 2011	16496453	24814835	29703474	77728293
NESTLE - 2012	21137275	25179644	29598012	88963218
NESTLE - 2013	22258279	33233095	34379584	108207480
NESTLE - 2014	22235640	44638052	25484372	10062067
NESTLE - 2015	23736777	59731857	21476122	119215053
NESTLE - 2016	7809776	15780232	24560450	45678900
CADBURY - 2007	6321955	12567888	3256689	34567790
CADBURY - 2008	3455782	13544344	5678900	37890780
CADBURY - 2009	2567800	16777987	4567900	41244670
CADBURY - 2010	3567555	12344677	6780900	37890800
CADBURY - 2011	3461335	16905424	3211728	40156508
CADBURY - 2012	6081645	13546873	5048027	43172624
CADBURY - 2013	2503661	12302105	3759730	28811286
CADBURY - 2014	1153295	11651634	4480074	28417005
CADBURY - 2015	23450900	12500980	3456788	24578900
CADBURY - 2016	1120320	12820278	4515939	28392951

Source: Financial Statements of the companies for various years

**APPENDIX 3: LOGS OF THE POOLED DATA OF THE COMPANIES.**

	LROE	LSTD	LLTD	LLEV
NC - 2007	15.05192	17.36773	13.82481	16.01055
NC - 2008	14.50826	16.96972	14.11167	15.88118
NC - 2009	14.11256	17.36232	12.75390	15.97887
NC - 2010	14.91483	17.44413	13.42380	15.73087
NC - 2011	14.31527	14.52069	13.49956	15.83172
NC - 2012	14.60565	15.08375	13.62651	16.12278
NC - 2013	14.83302	15.03254	13.50741	16.18478
NC - 2014	14.80859	15.15228	13.50330	16.25185
NC - 2015	14.43986	15.49188	13.71288	16.35109
NC - 2016	15.16813	15.33689	13.59706	16.26967
7UP COMPANY - -2013	15.67720	17.21229	15.97500	17.83842
7UP COMPANY - 2007	14.66812	17.04804	13.57922	13.90153
7UP COMPANY - 2008	13.80623	16.88672	13.39069	16.23433
7UP COMPANY - 2009	15.69420	16.97067	13.69984	16.02255
7UP COMPANY - 2010	14.99283	17.12814	13.68247	16.13795
7UP COMPANY - 2011	14.33339	17.20565	15.95651	17.69678
7UP COMPANY - 2012	14.86511	17.14279	16.20699	17.75457
7UP COMPANY - 2014	15.77923	17.29440	16.24293	18.03040
7UP COMPANY - 2015	15.02371	17.36100	15.93902	18.03202
7UP COMPANY - 2016	14.66813	17.38315	16.01292	17.93022
DANGOTE - 2007	17.48739	15.52795	16.24367	16.34619
DANGOTE - 2008	17.42036	15.59658	16.21268	16.36937
DANGOTE - 2009	15.50815	15.52214	16.00100	16.24435
DANGOTE - 2010	15.72963	15.59231	16.10602	16.97042

DANGOTE - 2011	14.95913	16.07869	16.16920	16.93851
DANGOTE - 2012	15.31528	15.07954	16.08209	16.71879
DANGOTE - 2013	15.24086	12.00555	13.13122	16.45988
DANGOTE - 2014	16.46018	16.60337	13.81542	17.63737
DANGOTE - 2015	16.30957	16.43129	15.58369	17.17569
DANGOTE - 2016	16.20343	16.34474	15.74566	16.69979
NESTLE - 2007	16.23926	16.29128	17.14279	15.02371
NESTLE - 2008	16.35395	17.36773	17.21229	15.77923
NESTLE - 2009	16.44797	17.29883	17.20565	14.86511
NESTLE - 2010	16.97510	17.59489	17.29440	14.49783
NESTLE - 2011	16.61866	17.02695	17.20677	18.16873
NESTLE - 2012	16.86655	17.04155	17.20322	18.30373
NESTLE - 2013	16.91822	17.31906	17.35297	18.49956
NESTLE - 2014	16.91721	17.61410	17.05358	16.12428
NESTLE - 2015	16.98254	17.90538	16.88245	18.59644
NESTLE - 2016	15.87089	16.57427	17.01665	17.63715
CADBURY - 2007	15.65954	16.34666	14.99622	17.35843
CADBURY - 2008	15.05556	16.42148	15.55227	17.45022
CADBURY - 2009	14.75856	16.63558	15.33456	17.53503
CADBURY - 2010	15.08739	16.32874	15.72962	17.45022
CADBURY - 2011	15.05716	16.64315	14.98232	17.50830
CADBURY - 2012	15.62079	16.42167	15.43451	17.58072
CADBURY - 2013	14.73326	16.32528	15.13986	17.17628
CADBURY - 2014	13.95813	16.27096	15.31515	17.16250
CADBURY - 2015	16.97042	16.34132	15.05585	17.01740
CADBURY - 2016	13.92912	16.36654	15.32312	17.16165

Source: Authors' computation, 2019.