

## **Earnings Management: An Investigation Of Companies Listed On The Nigerian Stock Exchange**

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## **ABSTRACT**

Earnings management has attracted considerable research efforts by various scholars across the domain of finance, management and governance and investigating various jurisdictions. Studies have shown different characteristics of earnings management by the companies listed on different stock exchanges with some exhibiting income-decreasing (downward earnings management) while some have exhibited income-increasing (upward earnings management) behavior. This study examines the extent and form of earnings management exhibited by companies listed on the Nigerian Stock Exchange. To investigate this, panel data technique is used on a sample of 101 companies across all the sectors of the Nigerian economy, covering the period 2009-2012. The occurrence of earnings management is detected using the Modified Jones Model of detecting discretionary accruals as a proxy for earnings management. The empirical results show that firms listed on the Nigerian Stock Exchange in the aggregate over the four year period exhibit a downward earnings management.

**Keywords: Earnings Management, Discretionary Accruals, Modified Jones Model, Nigerian Stock Exchange.**

## **1.0 INTRODUCTION**

The accounting numbers as disclosed in the annual reports are important, relevant and offers strong motivation for managers to manage earnings for their self interest and benefits (Abdul-Rahman & Ali, 2006). Financial statements offer the users the details of the state of affairs of the firm in the context of the degree of certainty and when the future cash flow of the firm is expected to materialized (Abed, Al-Attar, & Suwaidan, 2012). Recent accounting scandals which at their root were earnings management involving such companies as: WorldCom, Enrons, Parmalat, One-Tel and Cadbury Nigeria PLC, among others, has raised serious concerns about the quality of the contents of the financial information contained in the annual reports (Ebraim, 2007; Kajola, 2008; Imeokparia, 2013; Sukeecheep, Yarram, & AlFarooque, 2013). Once the managers succeed in manipulating the accounting numbers, it becomes difficult for the stakeholders in the firm to be able to evaluate the operating performance of the firm (Fathi, Hashemi, & Firuzhuhi, 2011). The effect of earnings management is that, the window-dressed financial statement will not only give misleading information to the users of the financial statement, but also capable of causing incredible devastating consequences.

The Generally Accepted Accounting Principles (GAAP) give room for the use of accruals to moderate the timing of cash flows since gross earnings comprise of actual cash flows from operating activities and accruals. GAAP requires that revenues and associated expenses are matched to the accounting period in which they are earned and incurred regardless of whether or not cash is received or paid. Researchers argued that the probable major limitation of accrual accounting is that, it gives managers the chance for earnings management (Dechow & Douglas, 2000). The effect is that, managers can bring to bear substantial discretion when making a decision on the size of the accruals and as a consequence make use of accruals to conceal poor performance of the core operating activities or cause a delay in the recognition of income till such periods when income falls short of expectation (Gupta, Mathur, Mishra, & Rangan, 2009).

It appears from the existing literature within the domain of earnings management that managers could choose to exercise discretion as to time and size on accruals either upward or downward. Upwards accruals are otherwise known as income increasing accruals while downwards accruals are otherwise known as income reducing accruals. The pattern of discretion that managers exercise over accruals differs for different sectors and from one jurisdiction to another. In this study, we examine the discretionary accrual patterns of the companies that are listed on the Nigerian Stock Exchange using a Modified Jones Model of detecting accruals and compare this with the findings of existing literature within the domain of earnings management. In this study, we use discretionary accruals as a proxy for earnings management.

### **1.1 Research Question**

In clear terms, the study is aimed at finding answers to the following research questions:

1. What is the pattern of discretionary accruals exhibited in aggregate terms by the companies listed on the Nigerian Stock Exchange between 2009 and 2012?
2. How does the discretionary accrual pattern differ from one sector to another and for each of the years 2009 to 2012?

The study contributes to literature within the domain of earnings management by using data from the companies that are listed on the Nigerian Stock Exchange as disclosed in the annual reports and the websites of the companies. Further, from an in-depth review of the existing literature within the domain of earnings management study, this appears to be the first study employing a census survey method for all the non-financial Nigerian listed firms thus examining this subject within the broader scope encompassing all the non regulated sectors.

## **2.0 LITERATURE REVIEW**

In view of the recent accounting scandals and the global economic status, earnings management has generated considerable attention within the circles of academia, independent external auditors, the shareholders, investors, regulators, financial analysts and professional bodies. Earnings management occurs when managers use their discretion in financial reporting and in transaction structuring with the intent to give false information to some

stakeholders of the firm about the true performance of the firm or with the objective to induce contractual effects which rely on the accounting numbers contained in the reported financial statement (Healy & Wahlen, 1999).

## 2.1 Earnings Management Methods

There are a number of earnings management methods documented in the literature which represent the different means by which the managers do exercise their discretion over the figures that are reported in the published financial statements. In sections 2.1.1 to 2.1.5 below, we examine each of the methods that have been discussed in the literature and the empirical findings by the scholars in this field.

### 2.1.1 Earnings Management through Managerial Accounting Choices

Watts & Zimmerman (1978) argued that managers exercise discretion and consequently manage earnings through accounting choices. They further argued that managers are inclined to choose accounting methods and policies that maximizes their personal wealth. Hagerman & Zmijewski (1979) argued that managers are inclined to manage earnings through accounting choices when a proportion of their emolument is a function of the performance of the firm. Zmijewski & Hagerman (1981) document that when managers are faced with the dilemma of making a choice between income increasing accounting choice and policies on the one hand and the income-reducing accounting choice and policies, it will likely be resolved in favour of income increasing accounting choices and policies. Skinner (1993) document a relationship between managerial accounting choices and array of investment opportunities available to the firm. On the other hand, Holthausen (1981) document no relationship between managerial choice of depreciation method, accounting switch and managerial compensation. Furthermore, Bowen & Noreen (1981) found no relationship between interest capitalization and managerial compensation contracts.

### 2.1.2 Earnings Management Through Real Transactions

Some researchers argued that, managers can be involved in income-increasing or income-decreasing accruals through real transaction, and this is known as 'real transactions based earnings management'(Sun & Rath, 2010). This could take the form of increasing the speed of sales through liberal credit terms or discounts (Roychowdhury, 2006), or production of more units of the company's product beyond what the market could absorb (Sun & Rath, 2010). In either case, the objective is to increase sales revenue (Roychowdhury, 2006), or to manage the fixed costs per unit of output and consequently achieve better operating margins (Sun & Rath, 2010). Other avenues of real transaction earnings management are sales of fixed assets to meet shortfall in earnings forecasts (Bartov, 1993), or cutting down R & D to boost earnings (Sun & Rath, 2010; Barber, Farfield, & Haggard, 1991). Some managers are inclined to be involved in the real transaction earnings management because, it is difficult to establish a benchmark to evaluate managerial actions to determine the real extent of the earnings management(Sun & Rath, 2010).

### 2.1.3 Earnings Management Through Specific Accruals

This form of earnings management occurs in the industries where a single transaction of accruals can be larger and also subjective to a considerable exercise of discretion and judgement. Examples of such industries are banking and insurance industries (McNicholes & Wilson, 1988; Beaver & Engel, 1996; Petroni, 1992). McNicholes & Wilson (1988) and Beaver & Engel, (1996) document that earnings management through specific accruals occur in the banking industry in the area of the bank loan loss provision. Petroni (1992) argued that claim loss reserve in the insurance industry is a window for specific accruals earnings management in the insurance industry.

### 2.1.4 Earnings Management Through Earnings Distribution Approach

Some scholars investigated the relationship between the desire of the managers to achieve earnings benchmark and the occurrence of earnings management. These scholars found empirical evidence to suggest that managers do manage earnings through earnings distribution approach to achieve earnings benchmark (Burgstahler & Dichev, 1997). These researchers further argued that since management have greater motivation for achieving earnings benchmark, they will make fewer allocation of earnings than anticipated just below the threshold and more allocation than anticipated just above the threshold. They argued further that, these thresholds are in three forms which are: an analysts' consensus forecast, previous year earnings and positive earnings (Burgstahler & Dichev, 1997; Degeorge, Petel, & Zeckhauser, 1999).the earnings management is evident when the earnings allocation is discontinued.

### 2.1.5 Earning Management Through Income Smoothing

It is believed that when the earnings of a firm are subject to business cycles which often cause volatility in earnings and ultimately the earnings forecasts, managers do engage in earnings management through income smoothing (Imhoff, 1977). This method of earnings management is detected by juxtaposing firms with similar characteristics, compare their earnings fluctuations and identify the firms that has unusual earnings behaviour as an evidence of earnings smoothing. Furthermore, Wang & Williams (1994) argued that, where a firm has highly unpredictable cash flow in relation to the unpredictable nature of earnings, the consequence is the practice of earnings management by the managers.

## 2.2 Accruals Models

### 2.2.1 Healy (1985)

Healy(1985)Healy (1985) is the first scholar to introduce the concept of accruals model of detecting earnings management. On the basis of two assumptions, he argued that the discretionary accruals represent the difference between the total accruals in two consecutive years. These assumptions have to do with the constant nature of non discretionary accruals and the systematic nature of occurrence of earnings management in every period. He statistically expressed the Non Discretionary Accruals using Healy (1985) model is expressed as follows:

The model Healy uses is:

$$NDA_{\tau} = TA_{t-T} \quad (1)$$

Where:

NDA	Estimated non-discretionary accruals;
TA	Total accruals scaled by lagged total assets;
t	1,2,..T is a year subscript for the years included in the estimation period;
$\tau$	A year subscript indicating a year in the event period.

### 2.2.2 DeAngelo (1986)

DeAngelo (1986) review the work of Healy (1985) on the use of an accruals Model to detect earnings management. She argued that non discretionary accruals share a similar pattern. In addition, the change in total accruals from the previous year to the current year (i.e. year t-1 to year t) gives an indication of the extent of earnings management by the management. This implies that the non discretionary accruals in year t-1 (current year) is the equivalence of the total accruals in year 't'. (Dechow, Sloan, & Sweeney, 1995).

DeAngelo's model is:

$$NDA_{\tau} = TA_{\tau-1} \quad (2)$$

Where:

NDA	Estimated non-discretionary accruals;
TA	Last period, total accruals (scaled by lagged total assets);
$\tau$	A year subscript indicating a year in the event period.

### 2.2.3 Jones (1991)

Some researchers believed that both the Healy (1985) and DeAngelo (1986) Accrual Models have shortcomings. Jones (1991) initiates the use of linear regression method to address the shortcomings of the previous accruals models. She argued that both the current assets and current liabilities have non discretionary accruals components. She identified sales and depreciation expenses as items in the financial statements that can be manipulated upwards or downwards by the managers as earnings management tools. Thus, she used change in sales revenue and changes in the gross values of plant, property and equipment as variables for detecting earnings management. Using the discretionary accruals as a proxy for earnings management, she calculated the remainder of the regression

(regression coefficients) as the determinants of accruals Jones (1991). The Jones model as illustrated by Ronen & Yaari (2008) as follows:

$$NDA_t = \alpha_1 A_{t-1} + \alpha_2 \Delta REV_t + \alpha_3 (PPE_t) \quad (3)$$

Where:

$NDA_t$	Non-discretionary accruals in year $t$ ;
$A_{t-1}$	Total assets in year $t-1$ ;
$\Delta REV_t$	Changes in revenue in year $t$ ;
$PPE_t$	Property, Plant and Equipment in year $t$ ;
$\alpha_1, \alpha_2, \alpha_3$	Firm specific parameters.

The coefficients  $\alpha_x$  are industry specific parameters. They estimate the effect of capital intensity on different industries. The firm specific parameters  $\alpha_1, \alpha_2, \alpha_3$  are generated in the estimation period using the model below:

$$TA_t = \alpha_1 A_{t-1} + \alpha_2 \Delta REV_t + \alpha_3 (PPE_t) + \epsilon_t \dots \dots \dots (4)$$

Where:

$TA_t$	Total Accruals in year $t$ ;
$\alpha_1, \alpha_2, \alpha_3$	OLS estimates of $\alpha_1, \alpha_2, \alpha_3$ .

The weakness of Jones Model is that, the Jones Model did not address the power of the managers to manipulate sales through the account receivables. That, according to Peasnell, Pope, & Young (2000), is the greatest known weakness of the Jones(1991) Model.

#### 2.2.4 Dechow, Sloan, & Sweeney (1995)

Dechow, Sloan, & Sweeney (1995) reviewed all the accruals methods of earnings management detection of previous scholars, especially, Healy (1985), DeAngelo (1986) and Jones (1991). They argued that the outcome empirical results generated by these models showed a low test power for earnings management of a reasonable economic scale. Dechow, Sloan, & Sweeney (1995) tested this argument through a simulation of an artificially manipulated samples and applied a time-series version of the Jones Model to the sample to evaluate the test power of the Jones model. The found that, the level of simulated manipulation exceeded 50% for the Jones model to achieve close to 100% level of earnings management detection. When they subjected the simulated manipulation at 5 percent of total assets and test for earnings management, the result detected only 30 percent of the manipulation(Dechow, Sloan, & Sweeney, 1995). Dechow, Sloan, & Sweeney (1995) addressed this limitation with an extension of the original Jones (1991) model with the introduction of account receivables into the regression model of the original Jones version. This is expressed as follows:

$$NDA_t = \alpha_1 A_{t-1} + \alpha_2 \Delta REV_t - \Delta AR_t + \alpha_3 PPE_t \dots \dots \dots 5$$

Where:

$NDA_t$	Non-Discretionary Accruals in year $t$ ;
$A_{t-1}$	Assets in year $t-1$ ;
$\Delta REV_t$	Changes in revenue in year $t$ ;
$\Delta AR_t$	Changes in accounts receivables in year $t$ ;
$PPE_t$	Property, Plant and Equipment in year $t$ ;
ROAM	Return on Assets in the Previous Year
$\alpha_{1i}, \alpha_{2i}, \alpha_{3i}$	Firm specific parameters.

The similarity between the Modified Jones Model and the Jones Model is that the estimated accruals are defined and in estimating NDA, the equation (3) reproduced below will be used by both the original Jones Model and the Modified Jones Model (Jones , 1991; Bergstresser & Philippon, 2006).

$$NDA_t = \alpha_1 A_{t-1} + \alpha_2 \Delta REV_t + \alpha_3 (PPE_t)$$

This is because, Dechow, Sloan, & Sweeney (1995) adopted this equation from Jones (1991) Model. In determining the actual NDA, however, the equation (5) reproduced below will be used:

$$NDA_t = \alpha_1 A_{t-1} + \alpha_2 \Delta REV_t - \Delta AR_t + \alpha_3 (PPE_t)$$

Peasnell, Pope, & Young, 2000 argued that the Modified Jones Model appears to be the most powerful in detecting discretionary accruals compared to other models.

### 2.2.5 The Industry Model

The last accruals model which is discussed in the literature is the Industry Model developed and used by Dechow & Sloan (1991). The industry model is based on the assumption that non-discretionary accruals are variable over time. Dechow & Sloan (1991) further assumed that firms in the same industry have common differences in the determinants of non-discretionary accruals. The Industry Model for calculating non-discretionary accruals by Dechow & Sloan (1991) is as follows:

$$NDA_t = \gamma_1 + \gamma_2 \text{median}_i(TA_t) \dots \dots (6)$$

Where:

$NDA_t$	Non-Discretionary Accruals in year $t$ ;
$\gamma_1, \gamma_2$	Firm specific parameters;
$\text{Median}_i(TA_t)$	Median value of total accruals scaled by lagged assets for all non-sample firms in the same two-digit SIC code.

The Industry Model has two disadvantages. First, the Model takes into consideration the changes as it relates to the entire industry without consideration to the specific conditions of the firm. Thus, the Industry Model could not capture the specific non-discretionary accruals and as a result, the Model can not differentiate between discretionary and non-discretionary accruals in the proper way. Second, the Industry Model assumes an existence of a connection in non-discretionary accruals from different companies operating within the same industry and ignores the connected discretionary accruals (Dechow & Sloan, 1991).

## 3.0 METHODOLOGY

### 3.1 Research Design

This study makes use of secondary data extracted from the audited annual reports of the companies that are listed on the Nigerian Stock Exchange between 2009 and 2012. There are 198 companies listed on the Nigerian Stock Exchange as at December 31, 2012. Consistent with the previous studies of Peasnell, Pope, & Young (2005), Firth, Fung, & Rui (2007), Kajola (2008) and Dabor & Adeyemi (2009), we excluded banks and insurance companies from the samples because these companies, according to Klein (2002) and Vafeas (2000) are specialized industries, under regulation of statutory bodies and have different structures of assets and liabilities. In addition, we deleted companies with incomplete data for the four years. This left us with 101 companies for the years 2009 to 2012 given a total of 404 firm years.

### 3.2 Model Specification

This study employs the use of Discretionary Accrual as a proxy for detecting the degree of Earnings Management in companies listed on the Nigeria Stock Exchange. The Jones (1991) Model as modified by Dechow, Sloan, & Sweeney (1995) and further expanded by Kothari, Leone, & Wasley (2005) will be the model of discretionary accruals estimation. Earnings management scholars argued that the inclusion of ROAM in the Modified Jones Model is to reduce the problems of heteroskedasticity and the problems of mis-specification that characterized the Jones and modified Jones models of estimating discretionary accruals (Kothari, Andrew, & Wasley, 2005).

The model is expressed statistically and represented by the Ordinary Least Square (OLS) equation as:

$$TACC_t = \alpha_1 TA_{t-1} + \alpha_2 \Delta REV_t - \Delta ART_t + \alpha_3 PPE_t + \alpha_4 ROAM_{t-1} + \epsilon_{it}$$

Where:

$TACC_{it}$	Total Accruals for firm $i$ in year $t$ ;
$TA_{it-1}$	Total Assets for firm $i$ in year $t-1$ ;
$\Delta REV_{it}$	Changes in revenue for firm $i$ in year $t$ ;
$\Delta REC_{it}$	Changes in accounts Receivables for firm $i$ in year $t$ ;
$PPE_{it}$	Property, Plant and Equipment for firm $i$ in year $t$ ;
$ROAM$	Lagged return on assets.
$\epsilon_{it}$	Error term for firm $i$ in year $t$ ;
$\alpha_1 \alpha_2 \alpha_3 \alpha_4$	Regression Coefficients for firm $i$

As indicated above, the model established the total accruals by subtracting cash flow from operations from the net income before extraordinary items. This is expressed as follows:

$$TACC_t = NIBEI - CFO \dots\dots\dots(1)$$

Once the TACC is determined as outlined above, we have to partition the TACC into the two component parts of the non discretionary accruals (NDA) and the discretionary accruals (EDA). In order to achieve this, the TACC is statistically expressed as:

$$TACC_t = \alpha_1 1At-1 + \alpha_2 \Delta REV_t - \Delta ART + \alpha_3 PPE_t + ROAM_{t-1} + \epsilon_{it} \dots\dots\dots(2)$$

The non-discretionary component of the total accruals as expressed above is modeled as a statistical function of the change in revenue, change in the account receivables, plant, property and equipment, and the return on assets managed in the previous accounting period as follows:

$$NDA_t = \alpha_1 1At-1 + \alpha_2 \Delta REV_t - \Delta ART + \alpha_3 PPE_t + ROAM_{t-1} \dots\dots\dots(3)$$

The difference between the equation (1) and equation (2) above is the residual 'e' and this is the discretionary accruals (EDA). This residual 'e' which represents the discretionary accruals is statistically expressed as follows in equation (4):

$$EDA_t = TACC - [\alpha_1 1At-1 + \alpha_2 \Delta REV_t - \Delta ART + \alpha_3 PPE_t + \alpha_4 ROAM_{t-1}] \dots\dots\dots(4)$$

The error term ( $\epsilon_{it}$ ) represents the discretionary accruals under the Modified Jones Model while the calculation of the coefficients ( $\alpha_{1i}$ ,  $\alpha_{2i}$ ,  $\alpha_{3i}$ ) was determined through a linear regression model with the aid of SPSS research software.

#### 4.0 DATA ANALYSIS, EMPRICAL RESULTS AND DISCUSSIONS

We use the OLS regression equation for EDA as detailed under the section 3.2 above and arrived at the following earnings management models for 2009, 2010, 211 and 2012 using the variables in Appendix B, C, D and E.

FIGURE 4.1 ESTIMATING THE EDA FOR 2009, 2010, 2011, 2012		
YEAR	EDA MODEL	RESEARCH VARIABLES
2009	$EDA_{t2009} = TACC - [0.2831At-1 + 0.072\Delta REV_t - \Delta ART + 0.439PPE_t + (-0.223ROAM_{t-1})]$	Research Variables in Appendix B
2010	$EDA_{t2010} = TACC - [0.0681At-1 + 0.079\Delta REV_t - \Delta ART + (-0.302)PPE_t + 0.279ROAM_{t-1}]$	Research Variables in Appendix C
2011	$EDA_{t2011} = TACC - [(-0.033)1At-1 + 0.275\Delta REV_t - \Delta ART + 0.082PPE_t + 0.134ROAM_{t-1}]$	Research Variables in Appendix D
2012	$EDA_{t2012} = TACC - [0.0241At-1 + (-0.275)\Delta REV_t - \Delta ART + 0.393PPE_t + 0.048ROAM_{t-1}]$	Research Variables in Appendix E

Source: Akinteye, York & Henderson (2014)

#### 4.1 Sectoral Presentation of Earnings Management 2009-2012

In sections 4.2-4.11 below, we present the estimated discretionary accruals (EDA) as a proxy for earnings management as computed from the EDA models presented in Figure 4.2 for each of the years 2009, 2010, 2011 and 2012 along the sectoral classification of the listed companies by the Nigerian Stock Exchange.

#### 4.2 Earnings Management of Companies in Agriculture Sector

In Appendix A, Table 4.2, we presents the degree of earnings management in the Agriculture Sector in 2009-2012. There are 13 observations in the Agriculture Sector with negative EDA. This is an indication that the companies



were involved in downward earnings management to conceal profits through manipulation of discretionary accruals. The maximum limit is -1.07. There are another 3 observations indicating positive EDA. This means that the sample companies increased the discretionary accruals thereby resulting in an income-increasing earnings management and the maximum level is 0.064. During the observation period, the average discretionary accrual of the sample companies in the Agric Sector is -0.24 which indicate that the whole sector carried out a downward earnings management between the year 2009 and 2012.

#### 4.3 Earnings Management of Listed Conglomerates Sector

In Appendix A, Table 4.3, we present the estimation of earnings management of companies in the conglomerates sector. There are 16 observations with negative EDA indicating that these firms were involved in income-reducing accruals to conceal their profits during the 2009-2012 and the maximum limit is -0.77. The table also presents 8 observations with positive EDA indicating that the sample firms were involved in income-increasing accruals to boost corporate profitability and the maximum level is 0.18. The firm with the highest level of income-increasing accrual is UAC NIG. PLC and the company with the highest level of income-reducing accruals is JOHN HOLT PLC. During the observation period, the average discretionary accruals of sample companies is -0.11 suggesting that the whole sector exhibited downward earnings management in this period.

#### 4.4 Earnings Management of Firms in the Construction and Real Estate Sector

In Appendix A, Table 4.4, we provide the estimated discretionary accruals for the companies operating in the construction and real estate sector during the observation period of 2009-2012. There are 12 observations with negative EDA indicating an income-reducing earnings management to conceal the profit of the firms. There are another 4 observations with positive EDA indicating that the firms carried out income increasing accrual to boost profitability. The average earnings management of sample firms is -0.15 which suggests that the whole sector executed income-reducing or downward earnings management.

#### 4.5 Earnings Management of Listed Companies in Consumer Goods Sector

In Appendix A, Table 4.5, we present the estimation of earnings management of companies in the Consumer Goods Sector. There is a total of 88 observations in the Consumer Goods Sector, out of which 74 observations show negative EDA, suggesting that these firms were involved in income-reducing earnings management to conceal their profits during the 2009-2012 and the maximum limit is -0.83. The table also presents 14 observations showing positive EDA, indicating that the sample firms were involved in income-increasing accruals to boost corporate profitability and the maximum level is 0.32. The firm with the highest level of income-reducing accrual is MCNICHOLS CONSOLIDATED PLC and the company with the highest level of income increasing accrual is VITAFOAM NIGERIA PLC. During the observation period, the average discretionary accruals of sample companies is -0.16 indicating that the whole sector executed income reducing accruals. When the Consumer Good Sector is compared with the Conglomerates, Agric and Construction and Real Estate Sectors, it could be observed that even though all these sectors executed income-reducing earnings management, the degree of earnings management in the Consumer Goods Sector is next to Agriculture Sector (-0.24) and slightly higher than conglomerates (-0.15) and higher than the Construction and Real Estate Sector (-0.11).

#### 4.6 Earnings Management in the listed firms in the Healthcare Sector

In Appendix A, Table 4.6, we provide the estimated discretionary accruals for the companies operating in the healthcare sector during the observation period of 2009-2012. There are 27 observations with negative EDA indicating an income-reducing earnings management to conceal the profit of the firms. There are another 5 observations with positive EDA suggesting that the firms carried out income increasing accrual to boost profitability. The average earnings management of sample firms is -0.17 which indicates that the whole sector executed income-reducing or downward earnings management during the observation period of 2009-2012.

#### 4.7 Earnings Management in Companies Listed in the ICT Sector

In Appendix A, Table 4.7, we provide the estimated discretionary accruals for the companies operating in the ICT sector during the observation period of 2009-2012. There are 23 observations with negative EDA indicating an income-reducing earnings management to conceal the profit of the firms. There are another 9 observations with positive EDA indicating that the firms carried out income increasing accrual to boost profitability. The average earnings management of sample firms is -0.11 which indicates that the whole sector executed income-reducing or downward earnings management during the observation period of 2009-2012.

#### 4.8 Earnings Management of Listed Companies in Industrial Goods Sector

In Appendix A, Table 4.8, we present the estimation of earnings management of companies in the Industrial Goods Sector. There is a total of 72 observations in the Industrial Goods Sector. Out of these observations, 67 observations indicate negative EDA, which suggests that these firms were involved in income-reducing earnings management to conceal their profits during the 2009-2012. The table also presents 5 other observations with positive EDA, indicating that the sample firms were involved in income-increasing accruals to boost corporate profitability and the maximum level is 0.13. The firm with the highest level of income-reducing earnings management is NIGERIAN ROPES PLC and the firm with the highest level of income increasing accrual is PAINTS AND COATING MANUFACTURING PLC. During the observation period, the average discretionary accruals of sample companies is -0.25 suggesting that the whole sector executed income reducing earnings management. When the Industrial Good Sector is compared with the Consumer Goods Sectors, the Conglomerates, Healthcare and ICT Sectors, it could be observed that even though all the sectors executed income-decreasing earnings management, the degree of earnings management in the Industrial Sector is higher than the degree of earnings management in the Consumer Goods Sector (-0.16), Healthcare Sector (-0.17) and ICT Sector (-0.107) in the observation period.

#### 4.9 Earnings Management of Listed Companies in Oil and Gas Sector

In Appendix A, Table 4.9, we provide the estimated discretionary accruals for the companies operating in the Oil and Gas Sector during the observation period of 2009-2012. There are 24 observations showing negative EDA which indicates an income-reducing earnings management to conceal the profit of the firms. There are another 12 observations with positive EDA suggesting that the firms carried out income increasing accrual to boost profitability. The average earnings management of sample firms is -0.086 which suggests that the whole sector executed income-reducing or downward earnings management during the observation period of 2009-2012.

#### 4.10 Earnings Management of Companies in the Natural Resources Sector

In Appendix A, Table 4.10, we provide the estimated discretionary accruals for the companies operating in the Natural Resources Sector during the observation period of 2009-2012. There are 13 observations with negative EDA indicating an income-reducing earnings management to conceal the profit of the firms. There are another 3 observations with positive EDA suggesting that the firms carried out income increasing accrual to boost profitability. The average earnings management of sample firms is -0.28 which indicates that the whole sector executed income-decreasing or downward earnings management during the observation period of 2009-2012.

#### 4.11 Earnings Management of Listed Companies in the Services Sector

In Appendix A, Table 4.11, we present the estimation of earnings management of companies in the Services Sector. There is a total of 72 observations in the Services Sector. Out of these observations, 17 observations indicate positive EDA, which suggests that these firms were involved in income-increasing earnings management to boost their profits during the 2009-2012 and the maximum extent is 0.29. The table also presents 55 other observations with negative EDA, indicating that the sample firms were involved in income-reducing accruals to conceal corporate profitability and the maximum level is -0.89. The firm with the highest level of income-reducing earnings management is ASSOCIATED BUS COMPANY PLC and the firm with the highest level of income increasing accrual is INTERLINKED TECHNOLOGIES PLC. During the observation period, the average discretionary accruals of sample companies are -0.15 indicating that the whole sector executed income reducing earnings management.

#### 4.12 Summary of Sectoral Earnings Management of Nigerian Listed Companies

In summary, the sectoral earnings management occurrence in the companies listed on the Nigeria Stock Exchange for the observation year 2009-2012 and its interpretation is as presented in Figure 4.12 below:

<b>FIGURE 4.12</b>		
<b>SUMMARY OF EARNINGS MANAGEMENT OF NIGERIAN LISTED FIRMS</b>		
<b>(2009-2012)</b>		
<b>SECTOR</b>	<b>EDA</b>	<b>INTERPRETATION</b>
AGRICULTURE	-0.23973	Income reducing earnings management
CONGLOMERATES	-0.10756	Income reducing earnings management
CONSTRUCTION AND REAL ESTATE	-0.14967	Income reducing earnings management

CONSUMER GOODS	-0.16481	Income reducing earnings management
HEALTHCARE	-0.17359	Income reducing earnings management
INDUSTRIAL GOODS	-0.24961	Income reducing earnings management
ICT	-0.10715	Income reducing earnings management
OIL AND GAS	-0.08566	Income reducing earnings management
NATURAL RESOURCES	-0.28005	Income reducing earnings management
SERVICES	-0.14976	Income reducing earnings management
Source: Akinteye, York & Henderson (2014)		

## 5.0 Conclusion

This paper examines the pattern of discretionary accruals exhibited in aggregate terms by the companies listed on the Nigerian Stock Exchange between 2009 and 2012. It further examines how the discretionary accrual pattern differs from one sector to another sector and for each of the years 2009 to 2012?

The analysis of this paper finds that Nigerian listed firms have earnings management characteristics similar to what is documented in the literature that, managers are capable of earnings management either upward (income-increasing) or downward (income-reducing) with the objective of meeting analysts forecasts (Burgstahler & Dichev, 1997; Degeorge, Petel, & Zeckhauser, 1999), for the purpose of managing tax obligations (Jones, 1991) or for income smoothing (Imhoff, 1977), or to achieve other specific objectives (McNicholes & Wilson, 1988; Beaver & Engel, 1996; Petroni, 1992). The analysis of the paper further shows that managers of Nigerian listed firms also do exercise discretionary accounting choices which could either reflect in upward or downward accruals (Hagerman & Zmijewski, 1979; Watts & Zimmerman, 1978; Skinner, 1993)

This paper, argues that, at firm level, some companies exhibit income-increasing earnings management while some companies exhibit income-reducing earnings management. However, at sectoral and exchange levels, the non-financial listed firms on the Nigerian Stock Exchange exhibit income-reducing accruals for each of the year in our study. However, we suggest that future research should investigate the tax regimes for non-financial listed firms on the Nigerian Stock Exchange for each of the years 2009, 2010, 2011 and 2012 to be able to provide empirical explanation to the earnings management pattern at the sectoral and exchange levels for the non-financial listed firms on the Nigerian Stock Exchange.

This paper contributes to the existing accounting literature in the domain of earnings management. Furthermore, this paper presents the earnings management characteristics of non-financial firms on the Nigerian Stock Exchange, which may mirror the earnings characteristics of firms listed on other Stock Exchanges in the African Continent. This paper provides further insights into the quality of financial reporting to the global investor community, the regulators of the stock market and the academic community.

## APPENDIX A

**TABLE 4.2**  
**EARNINGS MANAGEMENT OF COMPANIES IN AGRICULTURE SECTOR**

Corporate Name	Year	EDA	Corporate Name	Year	EDA
	2009	-0.25938		2009	-0.17234
FTN COCOA	2010	-0.228	LIVESTOCK	2010	-0.18633
PROCESSORS PLC	2011	0.00401	FEEDS PLC	2011	-0.02968
	2012	-0.43685		2012	0.06458
	2009	0.02038		2009	-0.55504
	2010	-0.24282	THE OKOMU	2010	-0.13535

PRESCO PLC	2009	0.02038	OIL PALM	2009	-0.55504
	2010	-0.24282	COMPANY	2010	-0.13535
	2011	-0.06832	PLC	2011	-0.0871
	2012	-0.4502		2012	-1.07317

Source: Akinteye, York & Henderson (2014)

**TABLE 4.3**  
**EARNINGS MANAGEMENT OF COMPANIES IN CONGLOMERATES SECTOR**

Corporate Name	Year	EDA	Corporate Name	Year	EDA
A.G. LEVENTIS (NIGERIA) PLC	2009	-0.10973	CHELLARAMS PLC	2009	-0.14377
	2010	-0.14399		2010	-0.06014
	2011	-0.00067		2011	-0.02414
	2012	-0.09145		2012	0.10938
JOHN HOLT PLC	2009	0.09546	SCOA NIGERIA PLC	2009	-0.50419
	2010	-0.23428		2010	-0.09043
	2011	-0.12206		2011	0.0122
	2012	-0.77486		2012	0.00768
TRANSNATIONAL CORPORATION	2009	-0.20223	UAC PLC	2009	-0.41804
	2010	0.0077		2010	-0.19826
	2011	0.00471		2011	0.18141
	2012	-0.0015		2012	0.11988

Source: Akinteye, York & Henderson (2014)

**TABLE 4.4**  
**EARNINGS MANAGEMENT IN THE CONSTRUCTION AND REAL ESTATE SECTOR**

Corporate Name	Year	EDA	Corporate Name	Year	EDA
COSTAIN WEST AFRICA PLC	2009	-0.31958	JULIUS BERGER NIGERIA PLC	2009	-0.39707
	2010	-0.12096		2010	-0.16058
	2011	0.03084		2011	0.00156
	2012	-0.19074		2012	-0.38261
ROADS NIGERIA PLC	2009	-0.24206	UACN PROPERTY DEVELOPMENT COMPANY PLC	2009	0.18992
	2010	-0.1775		2010	0.02786
	2011	0.07636		2011	-0.0033
	2012	-0.28779		2012	-0.05918

Source: Akinteye, York & Henderson (2014)

**TABLE 4.5**  
**EARNINGS MANAGEMENT OF COMPANIES IN CONSUMER GOODS SECTOR**

Corporate Name	Year	EDA	Corporate Name	Year	EDA
NORTHERN NIGERIAN FLOUR MILLS PLC	2009	-0.16775	POLY PRODUCTS NIGERIA PLC	2009	-0.34484
	2010	-0.02658		2010	-0.24403
	2011	-0.21044		2011	0.03243
	2012	0.23042		2012	-0.47333
PZ CUSSONS NIGEIA PLC	2009	-0.23563	SEVEN UP BOTTLING COMPANY PLC	2009	-0.48694
	2010	-0.1926		2010	-0.21666
	2011	0.0372		2011	-0.07453
	2012	-0.2621		2012	-0.57493

UNILEVER NIGERIA PLC	2009	-0.37592		2009	-0.52365
	2010	-0.14226	UTC NIGERIA PLC	2010	0.21202
	2011	-0.11308		2011	-0.01067
	2012	-0.34065		2012	-0.44557
VITAFOAM NIGERIA PLC	2009	0.32274		2009	0.04022
	2010	-0.12415	VONO PRODUCTS PLC	2010	-0.23708
	2011	0.00319		2011	-0.07092
	2012	-0.22411		2012	0.09848
	2009	-0.04611	DANGOTE SUGAR REFINERY PLC	2009	0.08406
CADBURY NIGERIA PLC	2010	-0.18211		2010	-0.05547
	2011	-0.02705		2011	-0.06443
	2012	-0.23882		2012	-0.29301
	2009	-0.06108		2009	0.09252
DANGOTE FLOUR MILLS PLC	2010	-0.12778	DN TYRE AND RUBBER PLC	2010	-0.21691
	2011	0.10305		2011	-0.05812
	2012	-0.22455		2012	-0.52654
	2009	-0.02323		2009	-0.24925
FLOUR MILLS OF NIGERIA PLC	2010	-0.10028	GUINNESS NIGERIA PLC	2010	-0.15457
	2011	0.03331		2011	-0.00131
	2012	-0.14499		2012	-0.40926
	2009	-0.18856		2009	-0.14941
HONEYWELL FLOUR MILLS PLC	2010	-0.13693	INTERNATIONAL BREWERIES PLC	2010	-0.27428
	2011	-0.07924		2011	-0.10807
	2012	0.37694		2012	-0.44226
	2009	-0.26005		2009	0.34187
MCNICHOLS CONSOLIDATED PLC	2010	-0.16245	MULTI-TREK INTEGRATED FOODS PLC	2010	-0.35722
	2011	-0.04676		2011	0.03300
	2012	-0.83465		2012	-0.26412
	2009	-0.02136		2009	-0.47171
NATIONAL SALT COMPANY OF NIGERIA PLC	2010	-0.08376	NESTLE NIGERIA PLC	2010	-0.15072
	2011	-0.07914		2011	-0.08012
	2012	-0.12841		2012	-0.27415
	2009	-0.47232		2009	0.01393
NIGERIA BREWERIES PLC	2010	-0.19805	NIGERIAN ENAMELWARE PLC	2010	-0.01748
	2011	-0.09951		2011	-0.1051
	2012	-0.45774		2012	-0.13563

Source: Akinteye, York & Henderson (2014)

**TABLE 4.6**  
**EARNINGS MANAGEMENT IN HEALTHCARE SECTOR**

Corporate Name	Year	EDA	Corporate Name	Year	EDA
	2009	-0.02712		2009	-0.13573
EVANS MEDICAL	2010	-0.18983	FIDSON	2010	-0.10283
PLC	2011	-0.01459	HEALTHCARE PLC	2011	0.05986
	2012	-0.60763		2012	-0.28768
	2009	-0.39295		2009	-0.28893
GLAXOSMITHKLINE	2010	-0.10283	MAY AND BAKER	2010	-0.19836
CONSUMER	2011	0.05986	NIGERIA PLC	2011	-0.0233
NIGERIA PLC	2012	-0.28768		2012	-0.31498
	2009	-0.33332	NEIMETH	2009	0.01144
MORISON	2010	-0.20334	INTERNATIONAL	2010	-0.08287
INDUSTRIES PLC	2011	0.02064	PHARMACEUTICALS	2011	0.03206
	2012	-0.3133	PLC	2012	-0.12478
	2009	-0.04088		2009	-0.16408
NIGERIAN GERMAN	2010	-0.19072	PHARMA DEKO PLC	2010	-0.23256
CHEMICALS PLC	2011	0.01936		2011	-0.00773
	2012	-0.42944		2012	-0.53012

Source: Akinteye, York & Henderson (2014)

**TABLE 4.7**  
**EARNINGS MANAGEMENT IN ICT SECTOR**

Corporate Name	Year	EDA	Corporate Name	Year	EDA
	2009	-0.15303		2009	0.08459
ADSWITCH	2010	-0.0551	CHAMS PLC	2010	-0.10108
PLC	2011	0.10804		2011	0.0085
	2012	-0.35602		2012	-0.02508
	2009	-0.17398	E-TRANZACT	2009	0.20723
COURTEVILLE	2010	-0.03839	INTERNATIONAL	2010	-0.10066
INVESTMENTS	2011	0.02714	PLC	2011	0.02012
PLC	2012	-0.14183		2012	-0.10146
	2009	0.52623		2009	0.50694
I.H.S NIGERIA	2010	-0.10836	NCR NIGERIA	2010	-0.01463
PLC	2011	-0.16155	PLC	2011	-0.14685
	2012	-0.66866		2012	-0.10145
	2009	-0.58274		2009	-0.58656
SMART	2010	-0.24022	TRIPPLE GEE &	2010	-0.23009
PRODUCTS	2011	0.08208	COMPANY PLC	2011	-0.01052
NIGERIA PLC	2012	-0.28075		2012	-0.62063

Source: Akinteye, York & Henderson (2014)

**TABLE 4.8**  
**EARNINGS MANAGEMENT OF COMPANIES IN INDUSTRIAL GOODS SECTOR**

Corporate Name	Year	EDA	Corporate Name	Year	EDA
ASHAKA CEMENT PLC	2009	-0.29751	AVON CROWNCAPS & CONTAINER PLC	2009	-0.35196
	2010	-0.20444		2010	-0.09572
	2011	-0.06788		2011	-0.12407
	2012	-0.60798		2012	-0.15964
BERGER PAINTS PLC	2009	-0.43262	BETA GLASS PLC	2009	-0.47455
	2010	-0.16011		2010	-0.2686
	2011	0.01858		2011	-0.07615
	2012	-0.28571		2012	-0.49719
CAP PLC	2009	0,0345	CEMENT COMPANY OF NORTHERN NIGERIA PLC	2009	-0.2399
	2010	-0.03516		2010	-0.17646
	2011	-0.04667		2011	-0.00665
	2012	0.14873		2012	0.27125
CUTIX PLC	2009	-0.40182	DANGOTE CEMENT COMPANY PLC	2009	-0.43967
	2010	-0.16982		2010	-0.43929
	2011	-0.07189		2011	-0.08872
	2012	-0.24237		2012	-0.32564
DN MEYER PLC	2009	-0.22231	FIRST ALUMINIUM NIGERIA PLC	2009	-0.30157
	2010	-0.25312		2010	-0.2005
	2011	-0.03073		2011	-0.01595
	2012	-0.33854		2012	-0.62221
GREIF NIGERIA PLC	2009	-0.48244	IPWA PLC	2009	-0.53338
	2010	-0.22071		2010	-0.15975
	2011	-0.00901		2011	-0.02094
	2012	-0.48976		2012	-0.40076
LAFARGE WAPCO NIGERIA PLC	2009	-0.7763	NIGERIAN BAG MANUFACTURING COMPANY PLC	2009	-0.13274
	2010	-0.26972		2010	-0.17002
	2011	-0.08026		2011	-0.00037
	2012	-0.51013		2012	-0.31115
NIGERIAN ROPES PLC	2009	-1.98165	PAINTS & COATINGS MANUFACTURING PLC	2009	-0.19133
	2010	-0.18591		2010	-0.02979
	2011	0.01507		2011	0.10231
	2012	-0.4234		2012	0.13157
PORTLAND PAINTS AND PRODUCTS NIG. PLC	2009	-0.02982	PREMIER PAINTS PLC	2009	-0.52954
	2010	-0.06644		2010	-0.23953
	2011	-0.0297		2011	0.07544
	2012	-0.44948		2012	-0.72522

Source: Akinteye, York & Henderson (2014)

**TABLE 4.8**  
**EARNINGS MANAGEMENT OF OIL AND GAS SECTOR**

Corporate Name	Year	EDA	Corporate Name	Year	EDA
	2009	0.35765		2009	0.05607
CONOIL PLC	2010	-0.14051	ETERNA OIL AND	2010	-0.03558
	2011	-0.12842	GAS PLC	2011	-0.00173
	2012	0.20392		2012	0.32203
	2009	0.03391	JAPPAUL OIL AND	2009	-0.25091
FORTE OIL PLC	2010	-0.10072	MARITIME	2010	-0.16249
	2011	-0.01241	SERVICES PLC	2011	0.0222
	2012	-0.27127		2012	-0.25554
	2009	-0.68201		2009	-0.57182
MOBIL OIL	2010	-0.18752	MRS OIL NIGERIA	2010	-0.28338
NIGERIA PLC	2011	-0.06043	PLC	2011	0.01327
	2012	-0.16503		2012	-0.31599
	2009	-0.13506		2009	-0.33532
OANDO PLC	2010	0.01945	TOTAL NIGERIA	2010	-0.15264
	2011	0.02166	PLC	2011	-0.07551
	2012	-0.14272		2012	0.10736
	2009	0.36015		2009	
UNION VENTURES	2010	-0.2183		2010	
AND PETROLEUM	2011	0.29634		2011	
PLC	2012	-0.21233		2012	

Source: Akinteye, York & Henderson (2014)

**TABLE 4.10**  
**EARNINGS MANAGEMENT IN THE NATURAL RESOURCES SECTOR**

Corporate Name	Year	EDA	Corporate Name	Year	EDA
	2009	-0.50253		2009	-0.46127
ALUMINIUM	2010	-0.21823	BOC GASES PLC	2010	-0.0396
EXTRUSION	2011	0.02438		2011	0.00034
INDUSTRIES PLC	2012	-0.57018		2012	-0.4834
	2009	-0.62725	THOMAS	2009	-0.3258
MULTIVERSE	2010	-0.22517	WYATT	2010	-0.22666
RESOURCES PLC	2011	-0.00593	NIGERIA PLC	2011	-0.02178
	2012	-0.45032		2012	0.39100

Source: Akinteye, York & Henderson (2014)



**TABLE 4.11  
EARNINGS MANAGEMENT OF COMPANIES IN SERVICES SECTOR**

Corporate Name	Year	EDA	Corporate Name	Year	EDA
	2009	-0.48213		2009	-0.40896
TANTALIZERS PLC	2010	-0.2655	THE TOURIST COMPANY OF NIGERIA PLC	2010	-0.15627
	2011	0.05366		2011	-0.02272
	2012	-0.60393		2012	-0.5185
	2009	-0.3029		2009	-0.04534
TRANS- NATIONWIDE EXPRESS	2010	-0.14961	UNIVERSITY PRESS PLC	2010	-0.10765
	2011	0.08035		2011	-0.00692
	2012	-0.08551		2012	-0.25439
	2009	-0.17741		2009	-0.11068
ACADEMY PRESS PLC	2010	-0.23613	AFROMEDIA PLC	2010	-0.14611
	2011	-0.04926		2011	0.0334
	2012	-0.46224		2012	-0.15404
	2009	-0.34289		2009	-0.13325
AIRLINE SERVICES AND LOGISTICS LIMITED	2010	-0.18428	ASSOCIATED BUS COMPANY PLC	2010	-0.15106
	2011	0.01713		2011	-0.19834
	2012	-0.33721		2012	-0.89877
	2009	-0.55362		2009	-0.47078
CAPITAL HOTELS PLC	2010	-0.19913	DAAR COMMUNICATIONS PLC	2010	-0.23892
	2011	0.01693		2011	-0.04836
	2012	-0.25929		2012	0.64326
	2009	-0.10237		2009	0.28952
IKEJA HOTELS PLC	2010	-0.00828	INTERLINKED TECHNOLOGY PLC	2010	-0.01818
	2011	0.00909		2011	-0.25257
	2012	-0.10612		2012	0.05243
	2009	0.18707		2009	-0.38023
LEARN AFRICA PLC	2010	-0.03485	NIGERIAN AVIATION HANDLING COMPANY PLC	2010	-0.21432
	2011	0.06197		2011	0.01917
	2012	-0.068		2012	0.64613
	2009	0.07441		2009	-0.26833
R.T. BRISCOE NIGERIA PLC	2010	-0.0692	RED STAR EXPRESS	2010	-0.13786
	2011	0.15774		2011	0.02377
	2012	-0.19608		2012	-0.428
	2009	0.0334		2009	-0.42336
SECURE ELECTRONIC TECHNOLOGY PLC	2010	0.07669	STUDIO PRESS NIGERIA PLC	2010	-0.18001
	2011	0.0019		2011	-0.02916
	2012	-0.04791		2012	-0.25743

Source: Akinseye, York & Henderson (2014)

**APPENDIX B: RESEARCH VARIABLES FOR ESTIMATING DISCRETIONARY ACCRUALS FOR 2009**

<b>RESEARCH VARIABLES FOR ESTIMATING EDA FOR 2009</b>						
S/ N			1/At2008	ChRev_ChRe c	PPE	ROAM
1	A.G.LEVENTIS (NIGERIA) PLC	CONGLOMERATE S	9.88927E -08	0.128405295	0.667272879	0.11991199 7
2	ACADEMY PRESS PLC	SERVICES	9.19978E -07	-0.210330796	0.686566395	0.0615833 0.14077313
3	ADSWITCH PLC	ICT	1.46761E -05	0.168804485	0.591006487	7 0.06021570
4	AFROMEDIA PLC AIRLINE SERVICES AND LOGISTICS	SERVICES	1.7792E- 07	-0.294002805	0.458255982	3 0.07689714
5	LIMITED ALUMINIUM EXTRUSION	SERVICES	4.1673E- 07	0.054370375	0.666734594	3 0.19358739
6	INDUSTRIES PLC	NATURAL RESOURCES	1.53839E -06	0.234403845	1.05596186	3 0.09464641
7	ASHAKACEM PLC ASSOCIATED BUS	INDUSTRIAL GOODS	4.00065E -08	-0.165326229	0.378931882	7 0.04874243
8	COMPANY PLC AVON CROWNCAPS & CONTAINERS	SERVICES	3.02955E -07	0.035189741	0.679936804	4 0.06017438
9	(NIG) PLC	INDUSTRIAL GOODS	2.3687E- 07	0.279190521	0.622982285	3 0.15412326
10	BERGER PAINTS PLC	INDUSTRIAL GOODS	4.92674E -07	0.072419163	0.773961578	4 0.13042145
11	BETA GLASS PLC	INDUSTRIAL GOODS	4.92674E -07	0.140011755	1.144306371	5 0.21117012
12	BOC GASES PLC	NATURAL RESOURCES	4.92674E -07	0.0000013	0.901789886	1 -
13	CADBURY NIGERIA PLC	CONSUMER GOODS	4.92674E -07	0.100207831	0.561014202	0.09171758 9
14	CAP PLC CAPITAL HOTELS	INDUSTRIAL GOODS	4.92674E -07	0.153121257	0.257984388	0.27878316 2
15	PLC CEMENT COMPANY OF NORTHERN	SERVICES	4.92674E -07	0.158115642	1.141243726	0.31537722 8
16	NIGERIA PLC	INDUSTRIAL GOODS	4.92674E -07	0.193898059	0.795301902	0.26346633 8
17	CHAMS PLC	ICT	4.92674E -07	-0.04422328	0.260642382	0.05402758 1
18	CHELLARAMS PLC	CONGLOMERATE S	4.92674E -07	0.202424452	0.270083545	-0.08010025 0.06664192
19	CONOIL PLC	OIL AND GAS	4.92674E -07	-0.06659111	0.0000051	4 -
20	COSTAIN WEST AFRICA PLC	CONSTRUCTION & REAL ESTATE	4.92674E -07	0.755789372	0.901192857	0.12373916 9
21	COURTEVILLE INVESTMENT PLC	ICT	4.92674E -07	0.292377343	0.168820996	0.10527575 4

22	CUTIX PLC DAAR COMMUNICATIONS	INDUSTRIAL GOODS	4.92674E -07	0.044290199	0.715673811	0.17669972 7
23	PLC	SERVICES	4.92674E -07	0.00000001	1.006544153	0.07316934 8
24	DANGOTE CEMENT COMPANY PLC	INDUSTRIAL GOODS	4.92674E -07	0.345534346	1.106347163	0.34411996 8
25	DANGOTE FLOUR MILLS PLC	CONSUMER GOODS	4.92674E -07	0.227388145	0.517799403	0.11713066 3
26	DANGOTE SUGAR REFINERY PLC	CONSUMER GOODS	4.92674E -07	0.006801499	0.364406747	0.34183644 -
27	DN MEYER PLC	INDUSTRIAL GOODS	4.92674E -07	-0.016364191	0.702502631	0.14698389 8
28	DN TYRE AND RUBBER PLC	CONSUMER GOODS	4.92674E -07	0.073762049	0.13522608	0.26278183 6
29	ETERNA OIL AND GAS PLC	OIL AND GAS	4.92674E -07	-0.286097559	0.11407974	0.23763423 1
30	E-TRANZACT INTERNATIONAL PLC	ICT	4.92674E -07	-2.157230708	0.256613591	0.05325102 1
31	EVANS MEDICAL PLC	HEALTHCARE	4.92674E -07	0.012122632	0.615917684	0.14235091 6
32	FIDSON HEALTHCARE PLC	HEALTHCARE	4.92674E -07	0.308614934	0.32038318	0.08947405 1
33	FIRST ALUMINIUM NIGERIA PLC	INDUSTRIAL GOODS	4.92674E -07	0.160676961	0.947839644	0.00294957 3
34	FLOUR MILLS OF NIGERIA PLC	CONSUMER GOODS	4.92674E -07	0.512331831	0.373323985	0.04250856 2
35	FORTE OIL PLC	OIL AND GAS	4.92674E -07	0.657577011	0.217330784	0.13290434 7
36	FTN COCOA PROCESSORS PLC	AGRICULTURE	4.92674E -07	0.129359993	0.737661598	0.08128524
37	GLAXOSMITHKLIN E CONSUMER NIG PLC	HEALTHCARE	4.92674E -07	0.00000134	0.589672437	0.21552350 8
38	GREIF NIGERIA PLC	INDUSTRIAL GOODS	4.92674E -07	0.245929068	0.955437476	0.00113832 1
39	GUINNESS NIGERIA PLC	CONSUMER GOODS	4.92674E -07	0.35772794	0.719949338	0.25439143 2
40	HONEYWELL FLOUR MILLS PLC	CONSUMER GOODS	4.92674E -07	0.00000011	0.604854959	0.07544007 1
41	I.H.S. NIGERIA PLC	ICT	4.92674E -07	-0.49505424	0.977973017	0.14697973 5
42	IKEJA HOTELS PLC	SERVICES	4.92674E -07	0.004465932	0.095144324	0.10918716 2
43	INTERLINKED TECHNOLOGIES PLC	SERVICES	4.92674E -07	-0.258130052	0.080470845	0.03795078 4
44	INTERNATIONAL BREWERIES PLC	CONSUMER GOODS	4.92674E -07	0.401835746	2.30057244	0.17253305 4

45	IPWA PLC	INDUSTRIAL	4.92674E				0.01682849
	JAPPAUL OIL AND	GOODS	-07	-0.192746419	0.681379791		4
	MARITIME		4.92674E				0.04571699
46	SERVICES PLC	OIL AND GAS	-07	-0.042148298	0.463960334		5
							-
		CONGLOMERATE	4.92674E				0.27899011
47	JOHN HOLT PLC	S	-07	-0.277424406	0.33789999		6
	JULIUS BERGER	CONSTRUCTION	4.92674E				0.06791352
48	NIGERIA PLC	& REAL ESTATE	-07	0.259838191	0.635142632		4
	LAFARGE-WAPCO	INDUSTRIAL	4.92674E				0.14954775
49	NIGERIA PLC	GOODS	-07	0.037181413	1.328778967		6
			4.92674E				
50	LEARN AFRICA PLC	SERVICES	-07	-0.387958667	0.125752211		0.21947747
	LIVESTOCK FEEDS		4.92674E				0.03885127
51	PLC	AGRICULTURE	-07	-0.190691174	0.458548514		5
	MAY AND BAKER		4.92674E				0.06006203
52	NIGERIA PLC	HEALTHCARE	-07	-0.052246476	0.694200058		4
	MCNICHOLS						-
	CONSOLIDATED	CONSUMER	4.92674E				0.06308015
53	PLC	GOODS	-07	0.601644872	0.729082388		4
	MOBIL OIL NIGERIA		4.92674E				0.21955947
54	PLC	OIL AND GAS	-07	-0.25744343	1.61484328		2
							-
	MORISON		4.92674E				0.03469875
55	INDUSTRIES PLC	HEALTHCARE	-07	-0.198014645	0.773022789		3
	MRS OIL NIGERIA		4.92674E				0.15191666
56	PLC	OIL AND GAS	-07	2.626173012	0.687761431		8
	MULTI TREK						-
	INTEGRATED	CONSUMER	4.92674E				0.10402463
57	FOODS PLC	GOODS	-07	0.285714286	0.045541448		6
	MULTIVERSE	NATURAL	4.92674E				
58	RESOURCES PLC	RESOURCES	-07	0.037584842	0.974826931		0.0203462
	NATIONAL SALT						
	COMPANY OF NIG	CONSUMER	4.92674E				0.36244057
59	PLC	GOODS	-07	0.108759511	0.475499082		5
			4.92674E				0.40610688
60	NCR (NIGERIA) PLC	ICT	-07	-0.444181384	0.031134404		5
	NEIMETH						-
	INTERNATIONAL						
	PHARMACEUTICAL		4.92674E				0.08408065
61	S PLC	HEALTHCARE	-07	0.067111482	0.124404364		7
	NESTLE NIGERIA	CONSUMER	4.92674E				0.47268366
62	PLC	GOODS	-07	0.721517498	1.121002682		8
	NIGERIAN						
	AVIATION		4.92674E				0.31687357
	HANDLING		-07	0.354069931	1.007296295		3
63	COMPANY PLC	SERVICES					
	NIGERIAN BAG		4.92674E				0.02545387
	MANUFACTURING	INDUSTRIAL	-07	-0.092113329	0.691899117		4
64	COMPANY	GOODS					
	NIGERIAN	CONSUMER	4.92674E				0.39650176
65	BREWERIES PLC	GOODS	-07	0.196592721	1.081013113		5
	NIGERIAN	CONSUMER	4.92674E				0.07241503
66	ENAMELWARE PLC	GOODS	-07	0.498169603	0.119874345		9

			4.92674E				-
67	NIGERIAN GERMAN CHEMICALS PLC	HEALTHCARE INDUSTRIAL	-07	-0.958338035	0.147101182		0.05238696 4
68	NIGERIAN ROPES NORTHERN NIGERIAN FLOUR MILLS	GOODS	-07	3.000165032	7.041004643		0.16963876 2
69		CONSUMER GOODS	-07	1.180595561	0.017217992		0.13124234 9
70	OANDO PLC PAINTS & COATINGS	OIL AND GAS	-07	0.650652704	0.053172916		0.02641991 8
71	MANUFACTURING PLC	INDUSTRIAL GOODS	-07	-0.129563334	0.421217486		0.02792893 8
72	PHARMA DEKO PLC POLY PRODUCTS	HEALTHCARE CONSUMER	-07	-0.224776076	0.607732415		- 0.30953792 7
73	NIGERIA PLC PORTLAND PAINTS AND PRODUCTS	GOODS	-07	0.644861092	0.969197988		0.09016040 7
74	NIG PLC PREMIER PAINTS	INDUSTRIAL GOODS	-07	0.063535959	0.326858174		0.18624486 6
75	PLC	INDUSTRIAL GOODS	-07	-0.067908742	0.92594427		0.02940383 1
76	PRESKO PLC PZ CUSSONS	AGRICULTURE CONSUMER	-07	-0.002158882	0.00000022		0.05957415 0.10246620
77	NIGERIA PLC R.T. BRISCOE	GOODS	-07	0.356741152	0.590789194		5
78	(NIGERIA) PLC	SERVICES	-07	-0.402443918	0.145382174		0.01628597 8
79	RED STAR EXPRESS ROADS NIGERIA	SERVICES CONSTRUCTION	-07	-0.134016811	0.548539562		0.12235457 7
80	PLC	& REAL ESTATE CONGLOMERATE	-07	0.459457376	0.736352576		0.03656181 2
81	SCOA NIGERIA PLC SECURE ELECTRONIC	S	-07	0.602798715	0.962260171		0.15386456 1
82	TECHNOLOGY PLC SEVEN-UP BOTTLING	SERVICES	-07	0.049970489	0.000000011		0.00393448 7
83	COMPANY PLC SMART PRODUCTS	CONSUMER GOODS	-07	0.302741782	1.189670301		0.09271188 9
84	NIGERIA PLC STUDIO PRESS	ICT	-07	0.051670134	1.114984578		0.05396552 1
85	NIGERIA PLC	SERVICES	-07	0.273903679	0.848752511		0.00500738 0.03454782
86	TANTALIZERS PLC THE OKOMU OIL PALM COMPANY	SERVICES	-07	0.416715285	1.216637794		3
87	PLC THE TOURIST COMPANY OF	AGRICULTURE	-07	0.01849667	1.103578454		0.10483910 9
88	NIGERIA PLC THOMAS WYATT	SERVICES NATURAL	-07	-0.112456567	0.929809256		- 0.06973826 2
89	NIGERIA PLC	RESOURCES	-07	0.055838807	0.890795996		0.00856060 2

	TOTAL NIGERIA		4.92674E				0.14755232
90	PLC	OIL AND GAS	-07	0.266710698	0.472500057		1
	TRANSNATIONAL	CONGLOMERATE	4.92674E				0.01337579
91	CORPORATION PLC	S	-07	-0.004195971	0.139622539		1
	TRANS-						
	NATIONAWIDE		4.92674E				0.24457479
92	EXPRESS	SERVICES	-07	-0.031373595	1.22028174		7
	TRIPPLE GEE &		4.92674E				0.11852270
93	COMPANY PLC	ICT	-07	0.124422933	1.120375269		7
		CONGLOMERATE	4.92674E				0.12440109
94	UAC PLC	S	-07	0.324808921	0.835138772		2
	UACN PROPERTY						
	DEVELOPMENT	CONSTRUCTION	4.92674E				0.05048225
95	COMPANY PLC	& REAL ESTATE	-07	0.19190581	0.012622738		3
		CONSUMER	4.92674E				0.24097113
96	UNILEVER	GOODS	-07	0.315127204	0.604566338		6
	UNION VENTURES						
	AND PETROLEUM		4.92674E		0.000000001		0.36808162
97	PLC	OIL AND GAS	-07	-1.123213882	1		5
	UNIVERSITY PRESS		4.92674E				0.23790462
98	PLC	SERVICES	-07	0.397115442	0.536457258		9
		CONSUMER	4.92674E				0.02862598
99	UTC NIGERIA PLC	GOODS	-07	0.174152309	0.896121978		4
	VITAFOAM	CONSUMER	4.92674E				0.17253291
100	NIGERIA PLC	GOODS	-07	0.342202163	0.541406824		9
	VONO PRODUCTS	CONSUMER	4.92674E				0.09742672
101	PLC	GOODS	-07	2.97437994	-0.126286446		2
<b>Source: Akinteye, York &amp; Henderson (2014)</b>							

APPENDIX C: RESEARCH VARIABLES FOR ESTIMATING DISCRETIONARY ACCRUALS FOR 2010

<b>RESEARCH VARIABLES FOR ESTIMATING EDA FOR 2010</b>						
			1/At2009	ChRev_ChRec	PPE	ROAM
1	A.G.LEVENTIS (NIGERIA) PLC	CONGLOMERATES	9.19E-08	0.1568592	0.619758	0.111425
2	ACADEMY PRESS PLC	SERVICES	8.82E-07	0.1743298	1.152974	0.059073
3	ADSWITCH PLC	ICT	9.45E-06	0.8992855	0.467707	0.09065
4	AFROMEDIA PLC	SERVICES	4.04E-07	1.126665	1.131876	0.136696
5	AIRLINE SERVICES AND LOGISTICS LIMITED	SERVICES	3.9E-07	-0.052084	0.722932	0.071893
6	ALUMINIUM EXTRUSION INDUSTRIES PLC	NATURAL RESOURCES	1.46E-06	0.2224214	1.146009	0.183129

7	ASHAKACEM PLC ASSOCIATED BUS COMPANY PLC	INDUSTRIAL GOODS	3.9E-08	0.0785394	0.923249	0.092346
8	AVON CROWNCAPS & CONTAINERS (NIG) PLC	SERVICES	2.46E-07	0.101761	0.585261	0.039619
9	BERGER PAINTS PLC	INDUSTRIAL GOODS	1.81E-07	0.3805325	0.431396	0.045947
10	BETA GLASS PLC	INDUSTRIAL GOODS	4.41E-07	0.1512329	0.721331	0.137807
11	BOC GASES PLC	NATURAL RESOURCES	7.55E-08	0.0002761	1.359833	0.136927
12	CADBURY NIGERIA PLC	CONSUMER GOODS	8.32E-08	0.0187366	0.147943	0.03574
13	CAP PLC	INDUSTRIAL GOODS	3.93E-08	0.1132647	0.66511	-0.0862
14	CAPITAL HOTELS PLC	INDUSTRIAL GOODS	4.62E-07	0.3745299	0.293012	0.286286
15	CEMENT COMPANY OF NORTHERN NIGERIA PLC	SERVICES	2.03E-07	0.0454172	0.977829	0.249207
16	CHAMS PLC	INDUSTRIAL GOODS	1.02E-07	-0.011551	0.794355	0.236358
17	CHELLARAMS PLC	ICT	9.32E-08	0.0256453	0.296982	-0.05975
18	CONOIL PLC	CONGLOMERATES	1.25E-07	0.5095747	0.283168	-0.06423
19	COSTAIN WEST AFRICA PLC	OIL AND GAS CONSTRUCTION & REAL ESTATE	2.51E-08	0.0109991	0.5373	0.095163
20	COURTEVILLE INVESTMENT PLC	CONSTRUCTION & REAL ESTATE	7.25E-08	0.2371662	0.454162	-0.04168
21	CUTIX PLC	ICT	3.62E-07	-0.001657	0.143796	0.078225
22	DAAR COMMUNICATIONS PLC	INDUSTRIAL GOODS	1.28E-06	0.0329371	0.74149	0.171174
23	DANGOTE CEMENT COMPANY PLC	SERVICES	3.83E-08	-0.131362	1.012558	0.073169
24	DANGOTE FLOUR MILLS PLC	INDUSTRIAL GOODS	1.97E-08	2.8991019	6.45741	0.283784
25	DANGOTE SUGAR REFINERY PLC	CONSUMER GOODS	1.82E-08	-0.01577	0.458714	0.093839
26	DN MEYER PLC	CONSUMER GOODS	1.29E-08	0.1075739	0.276525	0.251957
27	DN TYRE AND RUBBER PLC	INDUSTRIAL GOODS	3.79E-07	-0.233131	0.851097	-0.17946
28	ETERNA OIL AND GAS PLC	CONSUMER GOODS	2.98E-07	-0.658824	0.603544	-1.39631
29	E-TRANZACT INTERNATIONAL PLC	OIL AND GAS	1.11E-07	0.5315407	0.147022	-0.22293
30	EVANS MEDICAL PLC	ICT	3.62E-07	0.1518748	0.327874	-0.06053
31	FIDSON	HEALTHCARE	2.63E-07	0.2265272	0.711994	-0.16395
32	HEALTHCARE PLC	HEALTHCARE	1.39E-07	-0.010777	0.354873	0.086753
33	FIRST ALUMINIUM NIGERIA PLC	INDUSTRIAL GOODS	9.84E-08	0.0789218	0.831533	0.002455



34	FLOUR MILLS OF NIGERIA PLC	CONSUMER GOODS	9.46E-09	0.0874365	0.351264	0.034018
35	FORTE OIL PLC	OIL AND GAS	1.16E-08	-0.425417	0.156616	-0.10804
36	FTN COCOA PROCESSORS PLC	AGRICULTURE	2.87E-07	-0.029321	0.990539	0.074599
37	GLAXOSMITHKLINE CONSUMER NIG PLC	HEALTHCARE INDUSTRIAL	8.91E-08	0.2204888	0.81542	0.21552
38	GREIF NIGERIA PLC	GOODS	1.37E-06	0.1257527	0.981752	0.001113
39	GUINNESS NIGERIA PLC	CONSUMER GOODS	1.35E-08	0.2691303	0.811476	0.257101
40	HONEYWELL FLOUR MILLS PLC	CONSUMER GOODS	6.19E-08	0.3161579	0.626121	0.07544
41	I.H.S. NIGERIA PLC	ICT	4.66E-08	0.2223593	0.441521	0.037138
42	IKEJA HOTELS PLC	SERVICES	5.69E-08	0.0404199	0.088286	0.095736
43	INTERLINKED TECHNOLOGIES PLC	SERVICES	3.03E-06	0.1026564	0.111529	0.047235
44	INTERNATIONAL BREWERIES PLC	CONSUMER GOODS	1.96E-07	0.5863484	1.575352	-0.05609
45	INDUSTRIAL GOODS IPWA PLC	GOODS	1.45E-06	0.1418648	0.640354	0.015745
46	JAPPAUL OIL AND MARITIME SERVICES PLC	OIL AND GAS	4.49E-08	0.07199	0.642263	0.048129
47	JOHN HOLT PLC	CONGLOMERATES	9.67E-08	-0.99855	0.376414	-0.27559
48	JULIUS BERGER NIGERIA PLC	CONSTRUCTION & REAL ESTATE	6.48E-09	0.2450552	0.719931	0.060719
49	LAFARGE-WAPCO NIGERIA PLC	INDUSTRIAL GOODS	1.15E-08	-0.024469	1.314109	0.105978
50	LEARN AFRICA PLC	SERVICES	1.87E-07	-0.171092	0.133857	0.207641
51	LIVESTOCK FEEDS PLC	AGRICULTURE	1.15E-06	-0.272971	0.624374	0.04442
52	MAY AND BAKER NIGERIA PLC	HEALTHCARE	1.62E-07	-0.04129	0.788994	0.055926
53	MCNICHOLS CONSOLIDATED PLC	CONSUMER GOODS	4.14E-06	0.2466491	0.663281	-0.04892
54	MOBIL OIL NIGERIA PLC	OIL AND GAS	4.49E-08	-0.002342	0.848982	0.196206
55	MORISON INDUSTRIES PLC	HEALTHCARE	1.69E-06	-0.002704	0.767739	-0.03448
56	MRS OIL NIGERIA PLC	OIL AND GAS	6.02E-08	-0.036097	1.414602	0.103641
57	MULTI TREK INTEGRATED FOODS PLC	CONSUMER GOODS	2.58E-07	0.7900124	2.400309	-0.14762
58	MULTIVERSE RESOURCES PLC	NATURAL RESOURCES	2.34E-07	-0.000426	0.964929	0.019374
59	NATIONAL SALT COMPANY OF NIG PLC	CONSUMER GOODS	1.23E-07	0.1416467	0.428006	0.332611
60	NCR (NIGERIA) PLC	ICT	3.8E-07	-0.773755	0.046311	0.433524
	NEIMETH INTERNATIONAL					

	PHARMACEUTICALS PLC						
62	NESTLE NIGERIA PLC	CONSUMER GOODS	1.44E-08	0.1635168	0.707059	0.197879	
63	NIGERIAN AVIATION HANDLING COMPANY PLC	SERVICES	1.48E-07	0.0941181	1.124702	0.28057	
64	NIGERIAN BAG MANUFACTURING COMPANY	INDUSTRIAL GOODS	5.7E-08	0.0119209	0.640915	0.022625	
65	NIGERIAN BREWERIES PLC	CONSUMER GOODS	9.35E-09	0.1891156	1.130679	0.386958	
66	NIGERIAN ENAMELWARE PLC	CONSUMER GOODS	8.05E-07	0.1510206	0.124491	0.075204	
67	NIGERIAN GERMAN CHEMICALS PLC	HEALTHCARE INDUSTRIAL GOODS	1.49E-06	-0.091642	0.559481	-0.19259	
68	NIGERIAN ROPES NORTHERN NIGERIAN FLOUR MILLS	CONSUMER GOODS	1.34E-07	0.0000011	0.726315	0.017499	
69	OANDO PLC	OIL AND GAS	3.62E-07	0.2718416	0.181008	0.112157	
70	PAINTS & COATINGS MANUFACTURING PLC	INDUSTRIAL GOODS	2.47E-09	0.0003556	0.028702	0.011892	
71	PHARMA DEKO PLC	HEALTHCARE CONSUMER GOODS	9.43E-07	0.5988107	0.238209	0.014122	
72	POLY PRODUCTS NIGERIA PLC	HEALTHCARE CONSUMER GOODS	8.03E-07	-0.040595	0.639849	-0.36972	
73	PORTLAND PAINTS AND PRODUCTS NIG PLC	INDUSTRIAL GOODS	9.16E-07	-0.075115	1.084625	0.071223	
74	PREMIER PAINTS PLC	INDUSTRIAL GOODS	6.07E-07	0.2267713	0.327691	0.165418	
75	PRESCO PLC	AGRICULTURE CONSUMER GOODS	4.67E-06	-0.221871	0.942721	0.031077	
76	PZ CUSSONS NIGERIA PLC	AGRICULTURE CONSUMER GOODS	1.32E-07	0.2025044	1.214494	0.044556	
77	R.T. BRISCOE (NIGERIA) PLC	GOODS	2.17E-08	-0.421289	0.628746	0.094853	
78	RED STAR EXPRESS ROADS NIGERIA PLC	SERVICES CONSTRUCTION & REAL ESTATE	1.3E-07	-0.087711	0.191235	0.020592	
79	ROADS NIGERIA PLC	SERVICES CONSTRUCTION & REAL ESTATE	4.73E-07	-0.029001	0.512875	0.112641	
80	SCOA NIGERIA PLC	CONGLOMERATES	3.91E-07	0.0299879	0.693356	0.033724	
81	SECURE ELECTRONIC TECHNOLOGY PLC		2.16E-07	-0.203541	0.249716	0.062007	
82	SEVEN-UP BOTTLING COMPANY PLC	SERVICES CONSUMER GOODS	8.21E-08	0.1129402	0.002111	0.003713	
83	SMART PRODUCTS NIGERIA PLC	CONSUMER GOODS	3.14E-08	0.194412	1.033097	0.069744	
84	STUDIO PRESS NIGERIA PLC	ICT	1.15E-05	0.0795224	1.131666	0.051971	
85	STUDIO PRESS NIGERIA PLC	SERVICES	1.23E-07	0.1144181	0.724572	0.004184	

86	TANTALIZERS PLC THE OKOMU OIL PALM COMPANY	SERVICES	1.74E-07	-0.090153	1.191234	0.030837
87	PLC THE TOURIST COMPANY OF	AGRICULTURE	1.25E-07	0.1927082	0.581647	0.102354
88	NIGERIA PLC THOMAS WYATT	SERVICES NATURAL	7.56E-08	0.2860725	0.647333	-0.04855
89	NIGERIA PLC	RESOURCES	1.71E-06	-0.059975	0.925375	0.008893
90	TOTAL NIGERIA PLC TRANSNATIONAL	OIL AND GAS	2.01E-08	-0.365079	0.462795	0.124009
91	CORPORATION PLC TRANS- NATIONAWIDE	CONGLOMERATES	6.1E-08	0.0064633	0.051047	0.082486
92	EXPRESS TRIPPLE GEE &	SERVICES	1.96E-06	0.2785575	0.702553	0.129248
93	COMPANY PLC	ICT	5.9E-07	-0.132496	0.971613	0.103424
94	UAC PLC UACN PROPERTY DEVELOPMENT	CONGLOMERATES	4.68E-08	-0.025849	0.846018	0.122338
95	COMPANY PLC	CONSTRUCTION & REAL ESTATE CONSUMER	1.61E-08	-0.11964	0.013917	0.050866
96	UNILEVER UNION VENTURES AND PETROLEUM	GOODS	4.22E-08	0.2665204	0.720609	0.239047
97	PLC UNIVERSITY PRESS	OIL AND GAS	4.59E-05	0.2117663	1.342197	0.489253
98	PLC	SERVICES CONSUMER	5.72E-07	0.1717458	0.483474	0.192341
99	UTC NIGERIA PLC VITAFOAM NIGERIA	GOODS CONSUMER	3.59E-07	0.0906409	0.913451	0.027564
100	PLC VONO PRODUCTS	GOODS CONSUMER	1.83E-07	0.0710354	0.497173	0.146504
101	PLC	GOODS	4.92E-07	0.0198305	0.922339	-0.12209
<b>Source: Akinteye, York &amp; Henderson (2014)</b>						

APPENDIX D: RESEARCH VARIABLES FOR ESTIMATING DISCRETIONARY ACCRUALS FOR 2011

RESEARCH VARIABLES FOR ESTIMATING EDA FOR 2011						
			1/At2010	ChRev_ChRec	PPE	ROAM
1	A.G.LEVENTIS (NIGERIA) PLC	CONGLOMERATES	7.683E-08	0.2398436	0.095334	0.0760939
2	ACADEMY PRESS PLC	SERVICES	5.993E-07	0.203637	0.0972718	0.0862345
3	ADSWITCH PLC	ICT	8.255E-06	-0.8095262	0.1571488	-
4	AFROMEDIA PLC AIRLINE SERVICES AND LOGISTICS LIMITED	SERVICES	1.097E-07	-0.1265437	0.0449668	-
5	ALUMINIUM EXTRUSION INDUSTRIES PLC	SERVICES	3.82E-07	-0.0233048	0.0837474	0.0918853
6	INDUSTRIES PLC	NATURAL RESOURCES INDUSTRIAL GOODS	1.172E-06	0.1410843	0.0946311	0.1078628
7	ASHAKACEM PLC ASSOCIATED BUS COMPANY PLC	INDUSTRIAL GOODS	3.556E-08	0.0579483	0.1693753	0.1560586
8	AVON CROWNCAPS & CONTAINERS (NIG) PLC	SERVICES	2.663E-07	0.3212678	0.0194311	0.0520016
9	PLC	INDUSTRIAL GOODS	1.453E-07	0.0258279	0.0152734	0.0151583
10	BERGER PAINTS PLC	INDUSTRIAL GOODS	3.845E-07	-0.0369125	0.1553007	0.1970705
11	BETA GLASS PLC	INDUSTRIAL GOODS	6.266E-08	0.1161011	0.1288349	0.1148182
12	BOC GASES PLC	NATURAL RESOURCES	4.719E-07	0.0096895	0.2462895	0.2446417
13	CADBURY NIGERIA PLC	CONSUMER GOODS	3.482E-08	0.1343901	0.1859006	0.0786874
14	CAP PLC CAPITAL HOTELS PLC	INDUSTRIAL GOODS	4.219E-07	0.3015389	0.5485907	0.4805356
15	CEMENT COMPANY OF NORTHERN NIGERIA PLC	SERVICES	1.773E-07	-0.0765851	0.2339035	0.18946
16	PLC	INDUSTRIAL GOODS	1.84E-07	0.4678363	0.6060474	0.3223388
17	CHAMS PLC	ICT	9.893E-08	0.0503084	-0.059025	-
18	CHELLARAMS PLC	CONGLOMERATES	1.145E-07	0.3789719	0.0355778	0.1193114
19	CONOIL PLC COSTAIN WEST AFRICA PLC	OIL AND GAS CONSTRUCTION & REAL ESTATE	2.416E-08	1.300495	0.1060412	0.0971539
20	COURTEVILLE INVESTMENT PLC	CONSTRUCTION & REAL ESTATE	7.024E-08	0.00012	0.008275	0.008275
21	PLC	ICT	5.537E-07	-0.0527634	0.1681162	0.128031
22	CUTIX PLC DAAR	INDUSTRIAL GOODS	9.426E-07	0.0718101	0.1180675	0.1999438

	COMMUNICATIONS PLC		08		0.1754384	0.0726978
24	DANGOTE CEMENT COMPANY PLC	INDUSTRIAL GOODS	2.487E- 09	0.1384034	0.2931123	0.1586305
25	DANGOTE FLOUR MILLS PLC	CONSUMER GOODS	1.668E- 08	-0.1017146	0.0174973	0.0914071
26	DANGOTE SUGAR REFINERY PLC	CONSUMER GOODS	1.605E- 08	0.0291735	0.1188493	0.2592053
27	DN MEYER PLC DN TYRE AND	INDUSTRIAL GOODS	3.682E- 07	0.0755073	0.0345135	0.0853965
28	RUBBER PLC ETERNA OIL AND	CONSUMER GOODS	3.394E- 07	0.000233	0.1753165	0.1753165
29	GAS PLC E-TRANZACT	OIL AND GAS	1.129E- 07	2.8935029	0.1986804	0.1232783
30	INTERNATIONAL PLC	ICT	4.025E- 07	0.5044435	0.0507282	0.0805912
31	EVANS MEDICAL PLC FIDSON	HEALTHCARE	2.602E- 07	0.0337108	0.012407	0.02776
32	HEALTHCARE PLC FIRST ALUMINIUM	HEALTHCARE INDUSTRIAL	1.265E- 07	0.2464301	0.0597859	0.081265
33	NIGERIA PLC FLOUR MILLS OF	GOODS CONSUMER	9.735E- 08	0.0141418	0.0303956	0.0076581
34	NIGERIA PLC	GOODS	9.905E- 09	0.0277243	0.1412942	0.1911789
35	FORTE OIL PLC FTN COCOA	OIL AND GAS	1.5E-08 2.313E-	-0.251626	0.2708679	0.0473142
36	PROCESSORS PLC GLAXOSMITHKLINE	AGRICULTURE	07	-0.0717202	0.0511165	0.0147192
37	CONSUMER NIG PLC	HEALTHCARE INDUSTRIAL	7.065E- 08	0.3372848	0.2690632	0.2260573
38	GREIF NIGERIA PLC GUINNESS NIGERIA	GOODS CONSUMER	1.481E- 06	0.0611331	0.1060312	0.1082739
39	PLC HONEYWELL FLOUR	GOODS CONSUMER	1.276E- 08	0.1269103	0.3339032	0.2549685
40	MILLS PLC	GOODS	3.917E- 08	0.0361983	0.1346053	0.1215445
41	I.H.S. NIGERIA PLC	ICT	4.326E- 08	0.0301933	0.1044438	0.0037494
42	IKEJA HOTELS PLC INTERLINKED	SERVICES	5.085E- 08	-0.0281649	0.081143	0.1475306
43	TECHNOLOGIES PLC INTERNATIONAL	SERVICES CONSUMER	1.853E- 06	0.0716642	0.0047523	0.0246863
44	BREWERIES PLC	GOODS	1.009E- 07	0.491942	0.0192036	0.0200907
45	IPWA PLC JAPPAUL OIL AND	INDUSTRIAL GOODS	1.717E- 06	-0.1378985	0.2690442	0.1334979
46	MARITIME SERVICES PLC	OIL AND GAS	4.164E- 08	0.000114	0.0450334	0.0450334
47	JOHN HOLT PLC JULIUS BERGER	CONGLOMERATES CONSTRUCTION &	1.094E- 07	-0.0943004	0.1661744	0.001094
48	NIGERIA PLC LAFARGE-WAPCO	REAL ESTATE INDUSTRIAL	6.672E- 09	-0.0902641	0.0658751	0.0531223
49	NIGERIA PLC	GOODS	8.44E-09	0.1544385	0.0863816	0.0714407

50	LEARN AFRICA PLC LIVESTOCK FEEDS	SERVICES	1.924E-07	-0.0194077	0.0736685	0.0632727
51	PLC MAY AND BAKER	AGRICULTURE	9.288E-07	1.4183306	0.1401504	0.0490815
52	NIGERIA PLC MCNICHOLS	HEALTHCARE CONSUMER	1.467E-07	0.042681	0.0490351	0.0451509
53	CONSOLIDATED PLC MOBIL OIL NIGERIA	GOODS	5.658E-06	0.6721818	0.0387323	0.0344431
54	PLC MORISON	OIL AND GAS	4.078E-08	0.1345843	0.2252553	0.2333046
55	INDUSTRIES PLC MRS OIL NIGERIA	HEALTHCARE	1.793E-06	-0.0517076	-0.050924	0.0603931
56	PLC MULTI TREK	OIL AND GAS	2.439E-08	-0.103802	0.0494685	0.0704348
57	INTEGRATED FOODS PLC	CONSUMER GOODS	8.807E-08	0.1448467	0.0139733	0.0200733
58	MULTIVERSE RESOURCES PLC	NATURAL RESOURCES	2.244E-07	0.020294	0.0065659	0.0371341
59	NATIONAL SALT COMPANY OF NIG PLC	CONSUMER GOODS	1.332E-07	0.0957668	0.4146813	0.275556
60	NCR (NIGERIA) PLC NEIMETH	ICT	4.403E-07	0.1181043	0.1627839	0.4674164
61	INTERNATIONAL PHARMACEUTICALS PLC	HEALTHCARE CONSUMER	3.371E-07	-0.0930606	0.0416127	0.0136537
62	NESTLE NIGERIA PLC NIGERIAN AVIATION HANDLING	GOODS	1.657E-08	0.2545593	0.3072174	0.3023255
63	COMPANY PLC NIGERIAN BAG MANUFACTURING	SERVICES	1.372E-07	0.0601393	0.1765499	0.2347858
64	COMPANY NIGERIAN	INDUSTRIAL GOODS	5.35E-08	0.0734308	0.0687242	0.0676653
65	BREWERIES PLC NIGERIAN	CONSUMER GOODS	8.742E-09	0.1758046	0.4995499	0.3931011
66	ENAMELWARE PLC NIGERIAN GERMAN	CONSUMER GOODS	7.01E-07	-0.0069255	0.0867225	0.0773154
67	CHEMICALS PLC	HEALTHCARE INDUSTRIAL	1.572E-06	0.0442126	0.0080727	-0.020867
68	NIGERIAN ROPES NORTHERN	GOODS	1.516E-07	-0.0197325	0.0465333	0.0830614
69	NIGERIAN FLOUR MILLS	CONSUMER GOODS	3.895E-07	0.8313495	0.2529806	0.1605632
70	OANDO PLC PAINTS & COATINGS MANUFACTURING	OIL AND GAS	1.95E-09	0.0073534	0.0048788	0.0110746
71	PLC	INDUSTRIAL GOODS	6.334E-07	0.2212522	0.0778934	0.0687954
72	PHARMA DEKO PLC POLY PRODUCTS	HEALTHCARE CONSUMER	5.163E-07	0.4178717	0.0248173	0.2389883
73	NIGERIA PLC	GOODS	6.461E-07	0.0139974	0.0294801	0.0364797

74	PORTLAND PAINTS AND PRODUCTS NIG PLC	INDUSTRIAL GOODS	6.436E- 07	0.1358234	0.1769598	0.1588705
75	PREMIER PAINTS PLC	INDUSTRIAL GOODS	5.953E- 06	0.0992844	0.3359765	0.3400126
76	PRESCO PLC	AGRICULTURE	1.355E- 07	0.3701362	0.3495843	0.1806816
77	PZ CUSSONS NIGERIA PLC	CONSUMER GOODS	1.906E- 08	0.1036868	0.0908445	0.1257859
78	R.T. BRISCOE (NIGERIA) PLC	SERVICES	9.274E- 07	1.297132	0.2715806	0.1782681
79	RED STAR EXPRESS	SERVICES	4.481E- 07	-0.066421	0.0891523	0.1481987
80	ROADS NIGERIA PLC	CONSTRUCTION & REAL ESTATE	3.075E- 07	-0.1588719	0.0375038	0.0370671
81	SCOA NIGERIA PLC	CONGLOMERATES	2.173E- 07	0.000011	0.0479228	0.0479228
82	SECURE ELECTRONIC TECHNOLOGY PLC	SERVICES	8.318E- 08	0.042028	0.0719128	0.0086971
83	SEVEN-UP BOTTLING COMPANY PLC	CONSUMER GOODS	2.991E- 08	0.2964655	0.0755369	0.0788299
84	SMART PRODUCTS NIGERIA PLC	ICT	9.287E- 06	0.0494795	0.0886322	0.0594441
85	STUDIO PRESS NIGERIA PLC	SERVICES	1.245E- 07	0.010956	0.0097468	0.0101801
86	TANTALIZERS PLC	SERVICES	1.703E- 07	-0.0528648	0.0142372	0.0261265
87	THE OKOMU OIL PALM COMPANY PLC	AGRICULTURE	1.154E- 07	0.5914794	0.5374219	0.227415
88	THE TOURIST COMPANY OF NIGERIA PLC	SERVICES	8.777E- 08	0.00011	0.0979024	0.1202597
89	THOMAS WYATT NIGERIA PLC	NATURAL RESOURCES	1.571E- 06	-0.0468475	0.0385882	0.0036175
90	TOTAL NIGERIA PLC	OIL AND GAS	1.831E- 08	0.2399436	0.1072979	0.1059216
91	TRANSNATIONAL CORPORATION PLC	CONGLOMERATES	4.646E- 08	0.0209514	0.0529399	0.1606118
92	TRANS- NATIONAWIDE EXPRESS	SERVICES	1.843E- 06	-0.256733	0.107843	0.0688269
93	TRIPPLE GEE & COMPANY PLC	ICT	7.005E- 07	0.0030114	0.0317618	0.0323068
94	UAC PLC	CONGLOMERATES	4.865E- 08	-0.4656724	0.2942297	0.0934261
95	UACN PROPERTY DEVELOPMENT COMPANY PLC	CONSTRUCTION & REAL ESTATE	1.435E- 08	0.0383877	0.0475993	0.0486187
96	UNILEVER	CONSUMER GOODS	3.856E- 08	0.3788127	0.307816	0.2371997
97	UNION VENTURES AND PETROLEUM PLC	OIL AND GAS	1.5E-05	23.389751	0.2523208	-0.013887
98	UNIVERSITY PRESS PLC	SERVICES	4.945E- 07	0.0082237	0.1615224	0.2029307

99	UTC NIGERIA PLC	CONSUMER	3.854E-				
	VITAFOAM NIGERIA	GOODS	07	-0.0143486	0.0597067	0.0020043	
100	PLC	CONSUMER	1.403E-				
	VONO PRODUCTS	GOODS	07	0.5526631	0.1361346	0.1174084	
101	PLC	CONSUMER	2.286E-				
		GOODS	06	4.3029398	0.1828627	0.1174084	
<b>Source: Akinteye, York &amp; Henderson (2014)</b>							



APPENDIX E: RESEARCH VARIABLES FOR ESTIMATING DISCRETIONARY ACCRUALS FOR 2012

RESEARCH VARIABLES FOR ESTIMATING EDA FOR 2012						
			1/At2011	ChRev_ChRec	PPE	ROAM
1	A.G.LEVENTIS (NIGERIA) PLC	CONGLOMERATES	6.721E-08	-0.0639272	0.3421636	0.0834034
2	ACADEMY PRESS PLC	SERVICES	5.215E-07	-0.0077475	0.796682	0.0846559
3	ADSWITCH PLC	ICT	1.06E-05	-0.0236718	0.5309937	0.2017187
4	AFROMEDIA PLC	SERVICES	1.137E-07	0.0894755	0.3179487	0.0466195
5	AIRLINE SERVICES AND LOGISTICS LIMITED	SERVICES	4.009E-07	0.017749	0.5415681	0.0879097
6	ALUMINIUM EXTRUSION INDUSTRIES PLC	NATURAL RESOURCES INDUSTRIAL	1.024E-06	-0.0105872	1.3805342	0.0826704
7	ASHAKACEM PLC	GOODS	2.91E-08	0.0304157	1.6309452	0.1386298
8	ASSOCIATED BUS COMPANY PLC	SERVICES	2.021E-07	0.1205816	1.5772383	0.0147484
9	AVON CROWNCAPS & CONTAINERS (NIG) PLC	INDUSTRIAL GOODS	1.957E-07	-0.185249	0.4699567	0.020571
10	BERGER PAINTS PLC	INDUSTRIAL GOODS	3.767E-07	0.0502567	0.6862697	0.1521458
11	BETA GLASS PLC	INDUSTRIAL GOODS	5.584E-08	-0.055123	1.2506957	0.114813
12	BOC GASES PLC	NATURAL RESOURCES	4.421E-07	-0.0599733	1.0903152	0.2307653
13	CADBURY NIGERIA PLC	CONSUMER GOODS	3.058E-08	0.3475156	0.5127814	0.1632748
14	CAP PLC	INDUSTRIAL GOODS	3.419E-07	0.3225827	0.2653909	0.4446297
15	CAPITAL HOTELS PLC	SERVICES	1.493E-07	-0.0544121	0.7051617	0.1969172
16	CEMENT COMPANY OF NORTHERN NIGERIA PLC	INDUSTRIAL GOODS	7.956E-08	0.1428467	0.7533192	0.2620786
17	CHAMS PLC	ICT	1.059E-07	-0.0755062	0.288428	0.0631975
18	CHELLARAMS PLC	CONGLOMERATES	1.001E-07	0.1118773	0.3070709	0.0311172
19	CONOIL PLC	OIL AND GAS	1.617E-08	-0.1436774	0.3693592	0.0709676
20	COSTAIN WEST AFRICA PLC	CONSTRUCTION & REAL ESTATE	7.024E-08	0.0536204	0.4399638	0.008275
21	COURTEVILLE INVESTMENT PLC	ICT	3.227E-07	0.0435707	0.3302207	0.0979802
22	CUTIX PLC DAAR	INDUSTRIAL GOODS	1.069E-06	0.0894748	0.6547838	0.1338989

	COMMUNICATIONS PLC		08				
24	DANGOTE CEMENT COMPANY PLC	INDUSTRIAL GOODS	1.901E- 09	0.0924176	0.7978962	0.2240618	
25	DANGOTE FLOUR MILLS PLC	CONSUMER GOODS	1.454E- 08	0.0337012	0.441365	0.015253	
26	DANGOTE SUGAR REFINERY PLC	CONSUMER GOODS	1.373E- 08	-0.0511016	0.3494804	0.1016772	
27	DN MEYER PLC	INDUSTRIAL GOODS	3.958E- 07	0.176899	0.8872766	-0.037099	
28	DN TYRE AND RUBBER PLC	CONSUMER GOODS	3.394E- 07	0.0612939	0.6884048	0.1753165	-
29	ETERNA OIL AND GAS PLC	OIL AND GAS	7.071E- 08	1.0443703	0.083901	0.1244844	
30	E-TRANZACT INTERNATIONAL PLC	ICT	3.728E- 07	0.3085553	0.1420762	0.0469863	
31	EVANS MEDICAL PLC FIDSON HEALTHCARE	HEALTHCARE	2.524E- 07	0.0469236	1.1676431	0.0120352	
32	PLC	HEALTHCARE	1.06E-07	0.0390581	0.5790478	0.0501004	
33	FIRST ALUMINIUM NIGERIA PLC	INDUSTRIAL GOODS	1.026E- 07	-0.6864747	0.893369	0.0320428	-
34	FLOUR MILLS OF NIGERIA PLC	CONSUMER GOODS	8.567E- 09	0.200574	0.5905508	0.1222022	-
35	FORTE OIL PLC	OIL AND GAS	2.176E- 08	-0.5650479	0.2664971	0.3929427	-
36	FTN COCOA PROCESSORS PLC	AGRICULTURE	2.217E- 07	0.0368867	0.8737064	0.0490002	
37	GLAXOSMITHKLINE CONSUMER NIG PLC	HEALTHCARE INDUSTRIAL	5.646E- 08	0.3477949	0.5609073	0.2150341	
38	GREIF NIGERIA PLC	INDUSTRIAL GOODS	1.493E- 06	-0.1837481	1.0721474	0.1068751	
39	GUINNESS NIGERIA PLC	CONSUMER GOODS	1.084E- 08	0.0996033	0.9789619	0.2838294	
40	HONEYWELL FLOUR MILLS PLC	CONSUMER GOODS	3.032E- 08	0.1135982	1.0270201	0.1041769	
41	I.H.S. NIGERIA PLC	ICT	4.355E- 08	-0.0910847	1.3443091	-0.105121	
42	IKEJA HOTELS PLC	SERVICES	8.034E- 08	0.1279922	0.2110999	0.128207	
43	INTERLINKED TECHNOLOGIES PLC	SERVICES	1.541E- 06	-0.0580232	0.0576997	0.0039506	
44	INTERNATIONAL BREWERIES PLC	CONSUMER GOODS	7.788E- 08	0.3819409	0.797983	0.0148242	
45	IPWA PLC	INDUSTRIAL GOODS	5.987E- 07	0.0905274	0.8045765	0.0938085	
46	JAPPAUL OIL AND MARITIME SERVICES PLC	OIL AND GAS	4.164E- 08	0.0431255	0.5957588	0.0450334	
47	JOHN HOLT PLC	CONGLOMERATES	1.647E- 07	-0.4946484	0.7161205	0.2501235	
48	JULIUS BERGER NIGERIA PLC	CONSTRUCTION & REAL ESTATE	5.828E- 09	0.2454832	0.7094775	0.0575464	
49	LAFARGE-WAPCO NIGERIA PLC	INDUSTRIAL GOODS	6.554E- 09	0.1211434	0.9392616	0.0670778	

50	LEARN AFRICA PLC	SERVICES	2.072E-07	0.1321622	0.1747044	0.0793254
51	LIVESTOCK FEEDS PLC MAY AND BAKER	AGRICULTURE	6.413E-07	1.3087898	0.4988523	0.0967738
52	NIGERIA PLC	HEALTHCARE	1.42E-07	0.0344206	0.8712105	0.0474674
53	MCNICHOLS CONSOLIDATED PLC	CONSUMER GOODS	4.453E-06	-0.014634	1.1590505	0.0304839
54	MOBIL OIL NIGERIA PLC	OIL AND GAS	3.251E-08	0.601913	0.432587	0.1796223
55	MORISON INDUSTRIES PLC	HEALTHCARE	1.731E-06	0.2849242	0.806744	-0.049175
56	MRS OIL NIGERIA PLC MULTI TREK	OIL AND GAS	1.482E-08	0.1224698	0.3952899	0.0300527
57	INTEGRATED FOODS PLC	CONSUMER GOODS	5.453E-08	0.0882917	0.7193378	0.0086518
58	MULTIVERSE RESOURCES PLC	NATURAL RESOURCES	1.991E-07	-0.0009307	0.8835731	0.0058272
59	NATIONAL SALT COMPANY OF NIG PLC	CONSUMER GOODS	9.954E-08	0.3775503	0.5458577	0.3099692
60	NCR (NIGERIA) PLC NEIMETH	ICT	3.148E-07	1.0878011	0.2501983	0.1163763
61	INTERNATIONAL PHARMACEUTICALS PLC	HEALTHCARE CONSUMER GOODS	3.267E-07	0.0908147	0.2613591	0.0403231
62	NESTLE NIGERIA PLC NIGERIAN AVIATION HANDLING COMPANY	GOODS	7.411E-09	0.1163824	0.5612185	0.1373952
63	PLC NIGERIAN BAG MANUFACTURING	SERVICES INDUSTRIAL GOODS	1.006E-07	0.0789003	1.1565888	0.1294805
64	COMPANY NIGERIAN BREWERIES	CONSUMER GOODS	4.739E-08	0.0987127	0.6295982	0.0608862
65	PLC NIGERIAN	CONSUMER GOODS	4.642E-09	0.1748645	1.1333215	0.2652309
66	ENAMELWARE PLC NIGERIAN GERMAN	CONSUMER GOODS	9.81E-07	0.0479649	0.2126107	0.1213613
67	CHEMICALS PLC	HEALTHCARE INDUSTRIAL GOODS	1.39E-06	0.031801	0.5262809	0.00714
68	NIGERIAN ROPES NORTHERN NIGERIAN	CONSUMER GOODS	1.306E-07	0.0423552	0.8592919	0.0400893
69	FLOUR MILLS	CONSUMER GOODS	2.419E-07	0.3289957	0.0236933	0.1571001
70	OANDO PLC PAINTS & COATINGS	OIL AND GAS INDUSTRIAL GOODS	8.345E-09	0.0283406	0.1282911	0.0208754
71	MANUFACTURING PLC	CONSUMER GOODS	5.885E-07	0.7856885	0.2421204	0.072363
72	PHARMA DEKO PLC POLY PRODUCTS	HEALTHCARE CONSUMER GOODS	4.88E-07	-0.1266088	1.2640811	0.0234579
73	NIGERIA PLC PORTLAND PAINTS AND PRODUCTS NIG	CONSUMER GOODS INDUSTRIAL GOODS	6.424E-07	0.0957041	0.9710969	0.0293142
74	PLC	INDUSTRIAL GOODS	4.657E-07	0.0233419	0.4934117	0.1280311

75	PREMIER PAINTS PLC	INDUSTRIAL GOODS	5.581E- 06	0.2922125	1.6123201	0.3149952	-
76	PRESCO PLC	AGRICULTURE	9.476E- 08	0.2572937	0.8634487	0.2444975	
77	PZ CUSSONS NIGERIA PLC	CONSUMER GOODS	1.824E- 08	0.1239658	0.5064793	0.0869494	
78	R.T. BRISCOE (NIGERIA) PLC	SERVICES	6.911E- 08	0.232785	0.1325432	0.0202368	
79	RED STAR EXPRESS	SERVICES	1.428E- 06	0.6566992	1.7393209	0.2839987	
80	ROADS NIGERIA PLC	CONSTRUCTION & REAL ESTATE	3.072E- 07	-0.0097321	0.591674	0.03747	
81	SCOA NIGERIA PLC	CONGLOMERATES	2.173E- 07	0.4932203	0.2138624	0.0479228	
82	SECURE ELECTRONIC TECHNOLOGY PLC	SERVICES	8.77E-08	-0.0443073	0.1256357	0.0758128	
83	SEVEN-UP BOTTLING COMPANY PLC	CONSUMER GOODS	2.486E- 08	0.2200411	1.1438991	0.062763	
84	SMART PRODUCTS NIGERIA PLC	ICT	1.018E- 05	0.1284281	0.200985	0.0971142	
85	STUDIO PRESS NIGERIA PLC	SERVICES	1.27E-07	-0.076323	0.7168472	0.0099461	
86	TANTALIZERS PLC	SERVICES	1.523E- 07	-0.0601827	1.2165081	0.0127273	
87	THE OKOMU OIL PALM COMPANY PLC	AGRICULTURE	8.298E- 08	-0.0851175	2.4101388	0.3865533	
88	THE TOURIST COMPANY OF NIGERIA PLC	SERVICES	8.777E- 08	-0.10277	1.053992	0.0979024	
89	THOMAS WYATT NIGERIA PLC	NATURAL RESOURCES	1.559E- 06	-0.0528355	0.8237284	-0.038289	
90	TOTAL NIGERIA PLC	OIL AND GAS	1.703E- 08	0.6944653	0.5066741	0.0997723	
91	TRANSNATIONAL CORPORATION PLC	CONGLOMERATES	4.3E-08	-0.1568267	0.0299332	0.0489985	
92	TRANS-NATIONAWIDE EXPRESS	SERVICES	1.651E- 06	0.0247132	0.2814657	0.0966364	
93	TRIPPLE GEE & COMPANY PLC	ICT	6.926E- 07	0.0602696	1.4201088	0.0314026	
94	UAC PLC	CONGLOMERATES	4.118E- 08	-0.3202595	0.073432	0.2490532	
95	UACN PROPERTY DEVELOPMENT COMPANY PLC	CONSTRUCTION & REAL ESTATE	1.508E- 08	0.0207086	0.2744126	0.0500223	
96	UNILEVER	CONSUMER GOODS	3.098E- 08	0.0249308	0.8603225	0.2473148	
97	UNION VENTURES AND PETROLEUM PLC	OIL AND GAS	7.807E- 06	-6.7801382	0.3045321	0.1313581	
98	UNIVERSITY PRESS PLC	SERVICES	4.154E- 07	0.0821575	0.6158181	0.1356847	
99	UTC NIGERIA PLC	CONSUMER GOODS	3.505E- 07	0.1877551	0.9608988	0.0543086	
100	VITAFOAM NIGERIA PLC	CONSUMER GOODS	1.059E- 07	0.0155804	0.4799967	0.1027141	
101	VONO PRODUCTS PLC	CONSUMER GOODS	1.5E-06	2.82352	0.1248295	0.1027141	

**Source: Akinseye, York & Henderson (2014)**

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