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Article

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Accrual Earnings Management, Real Earnings Management and Firm's Value of Quoted Manufacturing Companies in Nigeria

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Abstract: This study investigated relationship between accrual-based earnings, real-based earnings management and firm's value of listed manufacturing companies in Nigeria. The secondary data used were collated from the annual reports of the selected listed manufacturing firms on the Nigeria stock exchange. The study adopted descriptive, panel least square regression technique such as pooled, fixed and random effect with various diagnostic evaluation techniques. The result revealed that accrual-based earnings management measured by abnormal discretionary accrual earnings (ADA) was positively related with the firm's value captured by the return on equity (ROE) of the quoted manufacturing companies and increased it to the turn of 38.31 per cent. On the other hand, the real-based earnings management measured by abnormal cash flow operation activities (ACF) was discovered to be negatively related with the firm's value captured by return on equity and thus reduced it by 12.25 per cent. The result of the individually selected quoted manufacturing companies showed that accrual-based earnings management captured by abnormal discretionary accrual earnings (ADA) and real-based earnings management proxied by abnormal cash flow of operation activities (ACF) influence the return on equity (ROE) a measured of firm value of the FLRM, GUIN, NASC, NIGB and PZCU by 1.29, 0.73, 0.14, 1.77 and 0.92 per cent respectively. While, on the other hand, accrual-based earnings management captured by abnormal discretionary accrual earnings (ADA) and real-based earnings management proxied by abnormal cash flow of operation activities (ACF) reduced the return on equity (ROE) a measured of firm value of the DCEM, DFLR, DSUG, HWEL and UNIL by 2.58, 1.21, 4.09, 3.69 and 3.80 respectively in Nigeria. The probability of F-statistic value 0.000 < 0.05 revealed that panel regression model was statistically significance and thus valid, reliable and appropriate for assessing the relationship and the effect of earnings management and the firm value of the listed manufacturing companies in Nigeria. Hence, this study concluded that the practice of earnings management constructively benefits the manipulator of accounts. It can be emphasized that ease in detecting accrual earnings management can make investors to decide whether a company is worthy of their investment. Also, if there are difficulties in detecting earnings management from real activity, it would be impossible for the investors to invest or being involved in speculative investment in the company.

Keywords: accrual-based earnings; real-based earnings; firm value; manufacturing companies; least square panel regression

JEL Classification: M11

1. Introduction

Earnings is very crucial for the growth and development of established companies and other business organizations particularly, the quoted manufacturing companies. Shareholders of every company believed that the performance of the company is hinged on the management of the company. The performance of the company is usually determined by the earnings. According to Subramanyam

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(2014) it was emphasized that earnings management is the most disturbing issue because of its relevance in the management of the organization through the use of accrual accounting based in financial statements. The use of accrual accounting was based on assumptions and estimates that have helped the management of the company to retrieve relevant information and thus improve the use of accounting.

Subramanyam (2014) identified two kinds of earnings management namely changes in accounting methods that are real and hidden earnings management which arises as a result of changes in accounting and policy estimates that changes accounting calculations. Earnings management can mar shareholders because of misleading and inconsistent information presented in the financial statement that is contrary to the reality and thus leading the shareholders to make improper decision concerning the performance of the company. It must be noted that earnings management is due to the differences in interests between managers (agent) and shareholders (principal). Also, it was discovered that differences of interests occur as a result of managers or shareholders' desire to maximize their individual welfare at the detriment of the company or organization.

Meanwhile, some of the earlier studies focused on accrual-based earnings manipulation techniques, while others such as Sari (2015) and Sun & George (2014) were on real-based earnings management technique apart from Atu, Atu, Enegbe and Atu (2016) that examined the determinants of earnings management using selected quoted companies in Nigeria. *S*alau and *A*yoib (2017) examined the relationship between accrual-based and real earnings management tolerance of auditors in boardrooms of politically connected companies. Susanto (2017) empirically examined the influence of accrual earnings management and real earnings management on firm's value of non-financial institution in Indonesia. Sunardi (2018) empirically examined the effect of earnings management on firm value before and when IFRS implementation was moderated by the life cycle of a firm. Chinedu and Augustine (2018) investigated the relationship between the board leadership structure and earnings quality of selected quoted manufacturing firms in Nigeria. However, this study would contribute to the existing literature on this subject by examining the relationship and the effect of accrual-based earnings and real-based earnings management on firm's value of quoted manufacturing companies in Nigeria.

2. Literature Review

Accrual Earnings Management

Earnings management is a thought developed by corporate management to intervene in the process of generating more earnings so as to meet the goal of the corporate organization. Scott (2012) asserted that earnings management can be properly understood in two ways: earnings management is an opportunity used by the management to maximize its utility in the aspect of contracts benefit, debt contracts and political costs. In this situation earnings management is known as opportunistic earnings management. The other earnings management known as efficient earnings management is an efficient contracting perspective used by company's management to gain flexibility in protecting themselves and company in anticipation of unforeseen circumstances. The absence of prohibition rules for the management to make earnings management but provided by the financial accounting standards to enable the company's management to determine accounting policies and methods as well as accrual

based accounting that gave the management opportunity to make earnings management. Thus, the motivation of management to make earnings management is motivation bonus, debt motivation, political motivation, taxation motivation, change of directors' motivation of stock sale (Watts & Zimmerman, 1986).

In view of this fact, Scott (2012) suggested earnings management forms such things as taking a bath, income minimization, income maximization and income smoothing. Setiawan (2009) suggested that earnings management can be done through the following techniques namely: available advantage of opportunities to make accounting estimates. This is usually done through the estimated of uncollectible receivables, estimation of depreciation of fixed assets for a particular period, amortization of assets that are not tangible and change in accounting method. This is applied by changing the accounting method used in recording a transaction such as changing the depreciation method; the shift of cost or income period is another alternative technique. Accrual can be calculated by changes in operating cash flow and net income. The financial statements are prepared using the accrual approach. Earnings management, using accrual approach can be seen from discretionary accrual. This can be achieved through the growth of the company until the company goes bankrupt (Hayn, 1995). Companies that are growing often report high earnings to meet investor expectations (Susanto, Paradipta & Djashan, 2017). Research on accrual earnings management often uses modified Jones models to measure earnings management over other models (Dechow & Dichev, 2002).

Real Earnings Management

Real earnings management is a manipulation performed by company management through the company's operational activities that have direct effect on the company's cash flow (Sun & Lan, 2014). Roychowdhury (2006) opined that earnings management through manipulation of real activity is the shifting of earnings management from normal operating practice to practice that suit the desired earnings target. This is motivated by the desire of the company's management to mislead some shareholders to accept the financial statements made based on normal operations. Real earnings management can lead to a reduction in the value of a company because earnings management done in the concerned period can have an adverse effect on future cash flows (Roychowdhury, 2006). Management or company's agents usually prefer to window dress earnings through real activities rather than accrual activities.

Roychowdhury (2006) stated that shift from accrual earnings management to real earnings management is due to the fact that accrual manipulation can attract auditor's attention compared to real manipulation, such as change of method used by company; reliance on accrual manipulation alone can be risky. However, to recover loss-earning or deficit at the end of year earnings can be difficult for company management to manipulate accruals. It was noted that if the reported earnings fail to meet the desired target, then the use of accrual-based strategy will a weak bailout. This means that management will no longer be able to achieve the desired target, and if the desired target is not achieved then the manager is considered not to have a good performance or the opportunity to get a bonus. Therefore, manipulation through real activity is a safe way to achieve earnings targets because it can be done throughout the company's operating period so that the probability of reaching the target can be enlarged.

Also, Roychowdhury (2006) found evidence that company management performs real earnings management through sales manipulation is an attempt to temporarily increase sales in a certain period by offering excessive product price discounts or providing lighter credit terms. This strategy can increase the sales volume and earnings of the current period, assuming a positive margin. However, giving discounted rates and lighter credit terms will reduce the cash flows of the current period resulting in abnormal cash flows. A reduction of discretionary expenditures is another way of applying real earnings management. This allows the company to reduce discretionary expenditures such as research and development expenses, advertising, sales, administrations and general expenditures especially in periods where such expenditures do not directly lead to revenue and earnings. This strategy can improve the cash flow and cash flows of the current period but with the risk of reducing future cash flows. Another means of engaging real earnings management is through overproduction or excess production to reduce the cost of goods purchased. This implies that company management can produce more than necessary with the assumption that higher production levels will lower fixed costs per unit of product. This strategy can reduce the cost of goods sold and increase operating earnings. However, sales in the same period cannot cover costs incurred from overproduction and the overhead cost of goods being manufactured resulting in cash flow from operations being lower than normal sales rates.

Accrual Earnings Management and Firm Value

Accrual earnings management is the most easily predictable earnings management. It was observed that when management performs earnings management then the firm value will go down. According to Ferdawati (2009) it was asserted that earnings information from accrual earnings management was questionable thus causing the value of the firm to fall and as such the investors do not believe in management performance. Thus, Herawaty (2008), Anggraini (2011), Gill, Biger & Mand (2013) supported the assertion of Ferdawati (2009) by saying that the accrual earnings management has a negative effect on the firm value. Management having more information than the shareholders are more likely to be selfish or engage in opportunistic behavior. This enables the management to provide a positive signal about the company's financial condition for its shareholders and stakeholders. Positive signals are accounting earnings that are resulted from earnings management. Accounting earnings is one measure of corporate evaluating the performance of company management. Earnings management may result in the earnings presented not to reflect in the actual financial state of the company. The financial statements provide information to stakeholders and stakeholders. The information is used by the principal whether the management company has been managing the company in accordance with the principal objectives such as increasing the firm value. Accrual earnings management is easier to detect than real earnings management. This can be seen from reported earnings as the company is growing. The ease of investors in detecting accrual earnings management can make investors to judge whether a company is worth it or not.

Real Earnings Management and Firm Value

Liu and Tsai (2015), Young, Lin, Chien & Chia-Hui, (2015) stated that there is a positive relationship between firm's value and real earnings management. While, the study carried out by Sun and George

(2014) stated that firm value is negatively related to real earnings management. Thus, difficult in detecting earnings management from real activity makes investors not to involve in speculation of an investment in the company. Real earnings management can reduce the value of the firm because it gives a negative effect on future cash flows (Roychowdhury, 2006).

Empirical Review

Bergstresser and Philippon (2006) examined the relationship between CEO compensation and the firm's value. The correlation and regression analysis result revealed that firms where the CEO compensation related or linked with the stock firm's value thus the option of holdings and likely use of discretionary accruals to manipulate the actual earnings to be reported on the financial statement. The study also emphasized that the use of discretionary accruals to manipulate the actual earnings is common in firms where CEOs' compensation is potentially tied to the value of stock and option holdings.

Padachi (2006) examined the trends in earnings management and its impact on firms' performance. The study adopted descriptive, correlation and regression technique to establish the relationship that exists among the financial variables under consideration. The result of the findings revealed that investments and receivables were associated with lower earnings and that inventory days and cash conversion cycle had positive relationship with earnings.

Shuto (2007) studied the relationship between discretionary accounting choices and executive compensation in a sample of Japanese firms. The data obtained and the analysis done using descriptive and correlation technique revealed that the use of discretionary accruals increases executive compensation; company managers receiving no bonus adopt income-decreasing accruals and extraordinary items; negative extraordinary items are strongly associated with no bonus payment and there is association between discretionary accruals and executive bonus.

Samiloglu and Demirgunes (2008) analysed the effect of earnings management on firm earnings in Turkey for period of 1998-2007 using correlation and regression methods. The results of the study showed that account receivables period, inventory period and leverage significantly and negatively affect earnings while firm's growth significantly and positively affects earnings. It was also established that cash conversion cycle, size and fixed financial assets had no statistically significant effect on earnings.

McNichols and Stubben (2008) examined earnings management in the context of suboptimal fixed assets investment decisions by public companies with high and discretionary accruals. The study adopted a survey research design which was analysed using descriptive analysis technique. From the results, it was found that earnings manipulating firms over-invest substantially during the misreporting period. It was also discovered following the misreporting period that investment drastically reduced. Thus, it implies that earnings management, in addition to targeting external stakeholders, can also influence internal investment decisions.

Akindayomi (2012) investigated earnings management and the banking crisis of the 1990s: Evidence from Nigeria. The study adopted descriptive and correlation analysis technique on the data collected from the Nigeria stock exchange and the financial statement of the banks. The findings from the result

showed that Nigeria banks had a positive association with earnings before taxes and provisions for loan losses. Thus, the study indicated that healthy banks have smoother earnings than distressed ones while distressed banks deliberately understate loan loss provisions to inflate earnings.

Uwuigbe, Uwuigbe and Okorie (2015) assessed the effects of firms' characteristics on earnings management of listed companies in Nigeria. The study adopted judgmental sampling technique to select a total of 20 listed firms in the Nigerian stock exchange market. The data gathered from the corporate annual reports between the periods of 2006-2010 were used for the study. A descriptive and ordinary least square pooled regression technique used for the analysis revealed that firm size and firms' corporate strategy had a positive and significant impact on earnings management measured by discretionary accruals. The result also revealed that the relationship between firms' financial leverage and discretionary accruals was statistically insignificant. Thus, it can be emphasized that large firms have a higher motivations and more prospects in engaging in the manipulative earnings and exaggerated earnings because of the intricacy of their operations and the complexity of identifying overstatement by the accounting information users.

Atu, Atu, Enegbe and Atu (2016) examined the determinants of earnings management using selected quoted companies in Nigeria. The study adopts a cross-sectional research design with an extensive reliance on secondary data from the financial statement of quoted company's annual report. The data were sourced from financial statement of the sampled 30 company using simple random sampling technique between the periods of 2007-2014 financial years. Secondary data sourced from financial statements of quoted companies retrieved from the Nigeria Stock Exchange and websites of the sampled companies were utilized for the study. The adopted technique was ordinary least squares (OLS) regression analysis and it was indicated the existence of negative and significant relationship between board size, audit firm type and earnings management. In addition, the study also found the existence of a non-significant relationship between firm size, ROA and earnings management.

Clement and Ajekwe (2017) examined accounting flexibility and earnings management quoted real sector firms in Nigeria. The extent to which management's use of accounting flexibility such as estimates, fair values and judgment and discretion in relation with earnings management by listed companies in Nigeria was examined. The study adopted an ex post facto descriptive design, multiple linear regressions technique were used to analyse the collected data. The result of the study showed that there is a positive and significant relationship between the use of estimates and earnings management. The relationship between judgment and discretion in the annual reports was found to be positive but statistically insignificant with earnings management. It was also found that there was inverse and insignificant relationship between the use of fair values and earnings management. Thus, it was established by the study that flexibility in accounting exists because circumstances and conditions across companies and industries vary.

Susanto (2017) empirically examined the influence of accrual earnings management and real earnings management on firm value in Indonesia. The study employed purposive sampling technique to sample of 162 non-financial companies listed in Indonesia Stock Exchange during the period 2012-2015. The data gathered for the study were analyzed using multiple regression method and it was discovered that accrual earnings management positively and significantly influence firm value. The result further revealed that real earnings management was negatively and significantly influences firm value.

*S*alau and *A*yoib (2017) examined the relationship between accrual-based and real earnings management tolerance of auditors in boardrooms of politically connected companies using auditor reputation theory and auditor litigation risk as the theoretical framework. Data were obtained from a sample of 89 Nigerian listed companies during the period from 2008 to 2013 and were analysed using descriptive and regression technique. Thus, it was discovered from the result that auditors tolerate more accrual earnings management and less real earnings management in companies that are politically connected. It was further discovered from the study that relationships exist between real earnings management and abnormal earnings management in companies that are politically connected.

Sunardi (2018) empirically examined the effect of earnings management on firm's value before and when IFRS implementation was moderated by the life cycle of firm. The study population was 127 manufacturing companies that go public and listed on the BEI 2010-2016. The sample for the study were the 192 firms that completed their financial report in year 2010-2016, financial report year 2010-2011 (96 observation) was to explain before applying of IFRS while financial report (96 observation) year 2012-2016 explained when application of IFRS. The descriptive and regression results of the study revealed that before the implementation of IFRS, earnings management had no effect on firm value. However, the implementation of IFRS showed that earnings management had a positive and significant effect on firm value. It was further discovered that sales growth and age of firm strengthen the influence of earnings management on firm value before implementation of IFRS. On the other hand, the percentage variable of sales growth, capital expenditure value and age of firm strengthens the influence of earnings management on company value during company implementation. Thus, this study sought to investigate the relationship and the effect of accrual-based earnings and real-based earnings management on firm value of quoted manufacturing companies in Nigeria.

3. Research Method

Model Specification and Variable Description:

This model adopted for the study was stated according to Susanto (2017) which empirically examined the influence of accrual earnings management and real earnings management on firm value of non-financial institution in Indonesia stock exchange and were based on modification of the original Jones (1991) model given as:

$$\frac{TA_t}{A_{t-1}} = a_1 \frac{1}{A_{t-1}} + B_{1t} \frac{\Delta \mathrm{REV}_t}{A_{t-1}} + B_{2t} \frac{\mathrm{PPE}_t}{A_{t-1}} + £_t \quad \text{..... (1a)}$$

Thus, to measure the accrual earnings management using the Jones (1991) modified models; the expression stated in (1b) was used.

$$\frac{TA_t}{A_{t-1}} = \frac{a_1}{A_{t-1}} + B_{1t}\left[\frac{\Delta \mathrm{REV}_t - \Delta \mathrm{REC}_t}{A_{t-1}}\right] + B_{2t} \frac{\mathrm{PPE}_t}{A_{t-1}} + V_t \quad \text{..... (1b)}$$

Where

TA_t = total accruals

A_{t-1} = total assets (t-1)

ΔREV_t = change in net operating revenues

ΔREC_t = change in net receivables

PPE_t = gross property, plant and equipment

α = constant,

B_{1t} and B_{2t} were coefficients of company-specific estimates

V_t = error term.

Abnormal Discretionary Accrual Earnings (ADA)

This was generated as the error term from modification of the original Jones (1991) model stated in (1) and used to capture the accrual-based earnings management in this study.

Real earnings management can be proxied with abnormal cash flow of operation activities, abnormal discretionary expense activities and abnormal production cost activities. Real earnings management regression model as measured by the residual value of the three regression models derived from the research Susanto (2017) as follows:

Abnormal Cash Flow of Operation Activities

This was stated that the value of abnormal cash flow of operation is low because of the sales manipulation so that if high, the value of abnormal cash flow of operation would indicate low real earnings management.

$$\frac{CFO_t}{A_{t-1}} = a_0 \frac{1}{A_{t-1}} + a_1 \frac{S_t}{A_{t-1}} + a_2 \frac{\Delta S_t}{A_{t-1}} + £_1 \quad \text{..... (2)}$$

Abnormal Discretionary Expense Activities

This sated that the reduction of discretionary loads will decrease the value of the abnormal discretionary expense so that if a high, the abnormal discretionary expense would indicates low real earnings management.

$$\frac{DISX_t}{A_{t-1}} = a_0 \frac{1}{A_{t-1}} + a_1 \frac{S_{t-1}}{A_{t-1}} + £_2 \quad \text{..... (3)}$$

Abnormal Production Cost Activities

This was stated that excess production leads to high abnormal production cost so that if high abnormal production cost value would indicate high real earnings management.

$$\frac{PROD_t}{A_{t-1}} = a_0 \frac{1}{A_{t-1}} + a_1 \frac{S_t}{A_{t-1}} + a_2 \frac{\Delta S_t}{A_{t-1}} + a_3 \frac{\Delta S_{t-1}}{A_{t-1}} + £_3 \quad \text{..... (4)}$$

Where:

CFO_t = cash flow of operation company i in year t,

$DISX_t$ = discretionary expenses (total advertising expenses, research and development expenses, and sales, general and administrative expenses) companies i in year t,

$PROD_t$ = production cost (total cost of goods sold and inventory changes) company i in year t,

S_t = sales company i in year t,

S_{t-1} = sales company i in year t-1,

ΔS_t = change in sales of company i in year t compared to sales year t-1,

ΔS_{t-1} = change in sales of company i in year t-1 compared to sales year t-2,

a_i = estimates of the coefficients,

$£_i$ = error terms such that $£_1$ = abnormal cash flow of operation, $£_2$ = abnormal discretionary expense and $£_3$ = abnormal production cost.

Based on the above computations, the model for this study was stated according to Susanto (2017) as:

FV = f(AEM, REM) …….. (5)

Where: FV = firm value, AEM = accrual earnings management, REM = real earnings management, However, the model applied for this study was stated with modification to the Susanto (2017) where accrual-based earnings management was measured by abnormal discretionary accrual earnings (ADA), real-based earning management was measured by abnormal cash flow of operation activities (ACF) and the firm value of the quoted manufacturing companies in Nigeria was captured by return on equity (ROE) as expressed in both panel data regression functional and mathematical form in (6) and (7) below:

$ROE_{it} = f(ADA_{it}, ACF_{it})$ …….. (6)

$ROE_{it} = \beta_0 + \beta_1 ADA_{it} + \beta_2 ACF_{it} + \mu_{it}$ …….. (7)

Source of Data and Method of Analysis

Data used in this study were sourced from the annual report of ten (10) purposively selected quoted manufacturing companies due to inconsistency in the preparation of financial statement by the companies and availability of the required information for computation of the variables under study. The companies used were Dangote Cement Plc., Dangote Flour Plc., Flour Mills Nigeria Plc., Dangote Sugar Plc., Guinness Nigeria Plc., Honeywell Flour Mill Plc., NASCON Allied Nigeria Plc., Nigeria Breweries Plc., PZ Cusson Nigeria Plc. and Unilever Nigeria Plc. The study covered a period of ten (10) years (2008-2017). Data collated were analyzed using descriptive statistics, and panel least square such as pooled, fixed and random effect estimation as well as post-estimation diagnostic tests for evaluating the consistency and efficiency of the estimates.

4. Result and Discussion

This presents the result of analysis on the data obtained from the financial statements of the selected quoted manufacturing companies. The analysis of the required data were done using descriptive analysis, correlation analysis, panel least square which consists pooled, fixed and random effect model and various test and evaluation techniques were presented as follows:

Table 4.1. Descriptive Analysis

	ROE	ADA	ACF
Mean	1.77229	0.81415	0.39076
Median	0.84846	0.54085	0.16215
Maximum	2.04808	1.74877	1.03291
Minimum	0.78733	0.28720	0.13432
Std. Dev.	2.06468	3.21607	1.75424
Skewness	2.03663	2.54711	4.19180
Kurtosis	3.83986	5.18536	6.21124
Jarque-Bera	30.25329	79.19084	37.48165
Probability	0.000000	0.000000	0.000000

Source: Researchers' Computation, 2019

The table 4.1 above showed the descriptive analysis results of accrual-based earnings management measured by abnormal discretionary accrual earnings (ADA) and real-based earning management measured by abnormal cash flow of operational activities (ACF) on the firm value of the quoted manufacturing companies in Nigeria captured by return on equity (ROE) for the period 2008-2017.

The result revealed on average that return on equity (ROE) a measured of firm value of the quoted manufacturing companies, accrual-based earnings management captured by abnormal discretionary accrual earnings (ADA) and real-based earnings management proxied by abnormal cash flow of operation activities (ACF) were 1.77, 0.81 and 0.39 respectively. The maximum & the minimum: return on equity (ROE) a measured of firm value of the quoted manufacturing companies, accrual-based earnings management captured by abnormal discretionary accrual earnings (ADA) and real-based earnings management proxied by abnormal cash flow of operation activities (ACF) were: 0.79 & 2.05, 0.29 & 1.75, 1.03 & 0.13 respectively. The standard deviation values of 2.06, 3.22 and 1.75 revealed the rate at which the return on equity (ROE) a measured of firm value of the quoted manufacturing companies, accrual-based earnings management captured by abnormal discretionary accrual earnings (ADA) and real-based earnings management proxied by abnormal cash flow of operation activities (ACF) were been deviated from their respective average or expected value.

Also, it was discovered that return on equity (ROE) a measured of firm value of the quoted manufacturing companies, accrual-based earnings management captured by abnormal discretionary accrual earnings (ADA) and real-based earnings management proxied by abnormal cash flow of operation activities (ACF) were positively skewed with skewness coefficient of 2.04, 2.54 and 4.19 respectively thus implies the distribution of the financial variables under consideration had a long tail to the right. However, the kurtosis of the return on equity (ROE) a measured of firm value of the quoted manufacturing companies, accrual-based earnings management captured by abnormal discretionary accrual earnings (ADA) and real-based earnings management proxied by abnormal cash flow of operation activities (ACF) with kurtosis coefficient indexes of 3.84, 5.19 and 4.19 respectively were mesokurtic in nature. The Jarque-Bera and probability values revealed that the return on equity (ROE) a measured of firm value of the quoted manufacturing companies, accrual-based earnings management captured by abnormal discretionary accrual earnings (ADA) and real-based earnings management proxied by abnormal cash flow of operation activities (ACF) were statistically significant in examining the relationship between the earnings management and the firm value of quoted manufacturing companies in Nigeria.

Table 4.2. Panel Least Square Pooled Effect Model

Dependent Variable: ROE				
Method: Panel Least Squares				
Periods included: 10				
Cross-sections included: 10				
Total panel (balanced) observations: 100				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	7.22164	5.09664	1.41694	0.2924
ADA	0.31041	0.04098	7.57313	0.0000
ACF	-0.25107	0.06188	-4.05718	0.0000
R-squared= 0.650, Adjusted R-square = 0.626, F-statistic = 16.712, Prob F-statistic = 0.000, Durbin-Watson Stat = 0.508				

Source: Researchers' Computation, 2019

Table 4.2 showed the result of the pooled panel regression output. It was discovered from the result that a linear relationship exists between the earnings management and firm value of the quoted manufacturing companies in Nigeria. Specifically, the result showed that accrual-based earnings management captured by abnormal discretionary accrual earnings (ADA) was positively related with the return on equity (ROE) a measure of firm value of the quoted manufacturing companies while a negative relationship was discovered between the real-based earnings management proxied by abnormal cash flow of operation activities (ACF) and return on equity (ROE) a measured of firm value of the quoted manufacturing companies in Nigeria. This result further revealed that accrual-based earnings management captured by abnormal discretionary accrual earnings (ADA) led to 31.04 per cent increase in return on equity (ROE) a measured of firm value of the quoted manufacturing companies in Nigeria. The real-based earnings management proxied by abnormal cash flow of operation activities (ACF) value of -0.2511 implies that the real-based earnings management proxied by abnormal cash flow of operation activities (ACF) reduced the return on equity (ROE) a measured of firm value of the quoted manufacturing companies by 25.11 per cent during the period under investigation.

The probability values of $0.000 < 0.05$ revealed that the estimated parameter for the accrual-based earnings management captured by abnormal discretionary accrual earnings (ADA) and real-based earnings management proxied by abnormal cash flow of operation activities (ACF) in the model were statistically significant in assessing the return on equity (ROE) a measured of firm value of the quoted manufacturing companies. The adjusted R-squared of 0.626 showed the 63 percent variation in the return on equity (ROE) a measured of firm value of the quoted manufacturing companies in Nigeria can be explained by the accrual-based earnings management captured by abnormal discretionary accrual earnings (ADA) and real-based earnings management proxied by abnormal cash flow of operation activities (ACF). Thus, it implies the extent to which the accrual-based earnings management captured by abnormal discretionary accrual earnings (ADA) and real-based earnings management proxied by abnormal cash flow of operation activities (ACF) affect the return on equity (ROE) a measured of firm value of the quoted manufacturing companies in Nigeria. Above all, the probability of the F- statistics $0.000 < 0.05$ showed that the pooled panel regression fitted was valid, reliable and acceptable for assessing the relationship between the earnings management and the firm value of the quoted manufacturing companies in Nigeria.

Table 4.3. Panel Least Square (Fixed Effect Model)

Dependent Variable: ROE				
Method: Panel EGLS (Cross-section weights)				
Periods included: 10				
Cross-sections included: 10				
Total panel (balanced) observations: 100				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	9.31582	6.00761	1.55067	0.1023
ADA	0.38306	0.09442	4.05697	0.0000
ACF	-0.12251	0.03939	-3.11035	0.0010
	Effects Specification			
Cross-section fixed (dummy variables)				
DCEM	-2.57630			
DFLR	-1.21326			
DSUG	-4.09448			
FLRM	1.28663			
GUIN	0.72637			
HWEL	-3.69406			
NASC	0.14289			
NIGB	1.77089			
PZCU	0.92190			
UNIL	-3.79658			
R-squared= 0.689, Adjusted R-square = 0.646, F-statistic = 19.062, Prob F-statistic = 0.000, Durbin-Watson stat = 0.503				

Source: Researchers' Computation, 2019

In table 4.3, the result of the fixed effect panel model on the relationship and the effect of accrual based earnings and real-based earnings management on the firm value of the quoted manufacturing companies in Nigeria was presented and it was revealed that accrual-based earnings management captured by abnormal discretionary accrual earnings (ADA) positively related to the return on equity (ROE) a measured of the firm value of the manufacturing companies and thus increased the return on equity (ROE) as a measured of firm value of quoted manufacturing companies in Nigeria by 38.32 per cent. However, and real-based earnings management proxied by abnormal cash flow of operation activities (ACF) had an inverse relationship with the return on equity (ROE) a measured of the firm value of the manufacturing companies and hence reduced the return on equity (ROE) as a measured of firm value of the quoted manufacturing companies in Nigeria by 12.25 per cent. The probability value 0.000 and 0.001 < 0.05 revealed that the accrual-based earnings management captured by abnormal discretionary accrual earnings (ADA) and real-based earnings management proxied by abnormal cash flow of operation activities (ACF) in the model were statistically significant in examining the return on equity (ROE) a measured of firm value of the quoted manufacturing companies in Nigeria.

A thorough examination of the result on individually selected quoted manufacturing companies showed that accrual-based earnings management captured by abnormal discretionary accrual earnings (ADA) and real-based earnings management proxied by abnormal cash flow of operation activities (ACF) improved the return on equity (ROE) a measure of firm value of the Flour Mills (FLRM), Guinness Nigeria (GUIN), NASCOM (NASC), Nigerian Breweries (NIGB) and PZ Cussion (PZCU) by 1.29, 0.73, 0.14, 1.77 and 0.92 per cent respectively. While, on the other hand, accrual-based earnings management captured by abnormal discretionary accrual earnings (ADA) and real-based earnings management proxied by abnormal cash flow of operation activities (ACF) reduced the return

on equity (ROE) a measure of firm value of the Dangote Cement (DCEM), Dangote Flour (DFLR), Dangote Sugar (DSUG), Honey Well (HWEL) and Unilever (UNIL) by 2.58, 1.21, 4.09, 3.69 and 3.80 respectively in Nigeria. The proportion of variation in the return on equity (ROE) a measured of firm value of the quoted manufacturing companies that can be explained by the accrual-based earnings management captured by abnormal discretionary accrual earnings (ADA) and real-based earnings management proxied by abnormal cash flow of operation activities (ACF) in this study was 64.6 per cent as revealed by the Adjusted R-square. The probability of F-statistic value 0.000 < 0.05 revealed that fixed effect panel regression model was statistically significant and thus valid, reliable and appropriate for assessing the relationship and the effect of earnings management and the firm value of the quoted manufacturing companies in Nigeria.

Table 4.4. Panel Least Square (Random Effect Model)

Dependent Variable: ROE				
Method: Panel EGLS (Cross-section random effects)				
Periods included: 10				
Cross-sections included: 10				
Total panel (balanced) observations: 100				
Swamy and Arora estimator of component variances				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3.73222	2.13576	1.74755	0.3402
ADA	0.21716	0.04647	4.67281	0.0000
ACF	-0.09163	0.024076	-3.80573	0.0003
	Effects Specification			
			S.D.	Rho
	Cross-section random		4067620.	0.2104
	Idiosyncratic random		12111724	0.7896
Cross-section random (dummy variables)				
DCEM	-0.76798			
DFLR	-2.13802			
DSUG	0.34084			
FLRM	1.33242			
GUIN	0.74615			
HWEL	-0.58741			
NASC	1.58345			
NIGB	0.83423			
PZCU	1.08106			
UNIL	-0.32609			
R-squared= 0.542, Adjusted R-square = 0.524, F-statistic = 95.368, Prob F-statistic = 0.000, Durbin-Watson stat = 0.533				

Source: Researchers' Computation, 2019

In table 4.4, the result of the random effect panel model on the relationship and the effect of accrual based earnings and real-based earnings management on the firm value of the quoted manufacturing companies in Nigeria was presented and it was discovered that accrual-based earnings management captured by abnormal discretionary accrual earnings (ADA) had a positive relationship with the return on equity (ROE) a measured of the firm value of the manufacturing companies and thus increased the return on equity (ROE) as a measured of firm value of quoted manufacturing companies in Nigeria to the turn of 21.72 per cent. It was also discovered that real-based earnings management proxied by abnormal cash flow of operation activities (ACF) was inversely related with the return on equity

(ROE) a measured of the firm value of the manufacturing companies and hence reduced the return on equity (ROE) as a measured of firm value of the quoted manufacturing companies in Nigeria by 9.16 per cent. The probability value 0.000 and 0.000 < 0.05 showed that the accrual-based earnings management captured by abnormal discretionary accrual earnings (ADA) and real-based earnings management proxied by abnormal cash flow of operation activities (ACF) in the model were statistically significant in determining the return on equity (ROE) a measured of firm value of the quoted manufacturing companies in Nigeria.

A thorough examination of the result on individually selected quoted manufacturing companies showed that accrual-based earnings management captured by abnormal discretionary accrual earnings (ADA) and real-based earnings management proxied by abnormal cash flow of operation activities (ACF) improved the return on equity (ROE) a measured of firm value for Dangote Sugar (DSUG), Flour Mills (FLRM), Guinness Nigeria (GUIN), NASCOM (NASC), Nigerian Breweries (NIGB) and PZ Cussion (PZCU) by 0.34, 1.33, 0.75, 1.58, 0.83 and 1.08 per cent respectively. While, on the other hand, accrual-based earnings management captured by abnormal discretionary accrual earnings (ADA) and real-based earnings management proxied by abnormal cash flow of operation activities (ACF) reduced the return on equity (ROE) a measured of firm value of the Dangote Cement (DCEM), Dangote Flour (DFLR), Honey Well (HWEL) and Unilever (UNIL) by 0.77, 2.13, 0.59 and 0.34 respectively in Nigeria. The Idiosyncratic random error term with rho value of 0.7896 revealed a strong correlation between the individually selected manufacturing companies and cross sectional error term. The proportion of variation in the return on equity (ROE) a measured of firm value of the quoted manufacturing companies that can be explained by the accrual-based earnings management captured by abnormal discretionary accrual earnings (ADA) and real-based earnings management proxied by abnormal cash flow of operation activities (ACF) in this study was 52.4 per cent as revealed by the Adjusted R-square. The probability of F-statistic value 0.000 < 0.05 revealed that random effect panel regression model was statistically significant and thus valid, reliable and appropriate for assessing the relationship and the effect of earnings management and the firm value of the quoted manufacturing companies in Nigeria. Therefore, this result led to the Hausman Test that was presented in table 4.5 below.

Table 4.5. Correlated Random Effects - Hausman Test

Test cross-section random effects				
Test Summary		Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random		2.13026	2	0.1912
Cross-section random effects test comparisons:				
Variable	Fixed	Random	Var(Diff.)	Prob.
ADA	2.88306	3.78161	0.18115	0.0013
ACF	0.25351	-0.54632	3.06463	0.6196

Source: Researchers' Computation, 2019

Table 4.5 showed the result of Hausman Test for the cross-section random effect. The chi-square value 2.13 < 5.99 and the probability value of 0.19 > 0.05 revealed that the random effect model fitted for the study of accrual based earnings and real-based earnings management on the firm value of the quoted manufacturing companies in Nigeria was not better than the fitted fixed effect model in this study. Also, the probability value for the variance difference for the estimated parameter for accrual-based earnings management captured by abnormal discretionary earnings (ADA) 0.001 < 0.05

revealed its statistical significance and appropriateness of fitting random effect model while, the probability value of 0.62 > 0.05 for the variance difference for real-based earnings measured by abnormal cash flow of operational activities affirmed the inappropriateness of random effect model. Thus, the used of fixed effect model as the most efficient, consistent, sufficient and unbiased model led to the residual cross-sectional dependence test presented in the table 4.6 below.

Table 4.6. Residual Cross-Section Dependence Test

Null hypothesis: No cross-section dependence (correlation) in weighted residual			
Periods included: 10			
Cross-sections included: 10			
Total panel (balanced) observations: 100			
Test employs centered correlations computed from pairwise samples			
Test	Statistic	d.f.	Prob.
Breusch-Pagan LM	194.6124	90	0.0000
Pesaran scaled LM	30.21401		0.0000
Bias-corrected scaled LM	29.19302		0.0000
Pesaran CD	17.65462		0.0000

Source: Researchers' Computation, 2018

In table 4.6, the result of the residual cross-section dependence using Breusch-Pagan LM was presented. Thus, Breusch-Pagan LM, Pesaran scale LM, Bias-corrected scale LM statistic value of 194.612, 30.214 and 29.193 respectively with the probabilities value of 0.000 < 0.05 showed that cross-section dependence can be rejected. Hence, it implies that there were no cross-section dependence between the accrual-based earnings management captured by abnormal discretionary accrual earnings (ADA) and real-based earnings management proxied by abnormal cash flow of operation activities (ACF) on the firm value of the quote manufacturing companies captured by their return on equity (ROE) in Nigeria.

5. Implication of the Findings and Conclusion

This study focused on accrual-based earnings and real-based earnings management and their effects on the firm's value of quoted manufacturing firm in Nigeria. From the study it was revealed that accrual-based earnings management captured by abnormal discretionary accrual earnings (ADA) positively related to the return on equity (ROE) a measured of the firm value of the manufacturing companies. This affirmed the Sunardi (2018) study that revealed positive and significant effect of earnings management on firm value. This was contrary to the result obtained by Herawaty (2008); Anggraini (2011) and Gill et al. (2013) that emphasized that accrual earnings management had a negative effect on the firm value. Thus, Ferdawati (2009) asserted that earnings information from accrual earnings management was questionable hence causing the value of the firm to fall and as such the investors do not believe in management performance. However, real-based earnings management proxied by abnormal cash flow of operation activities (ACF) had an inverse relationship with the return on equity (ROE) a measured of the firm value of the manufacturing companies and hence reduced the return on equity (ROE) as a measured of firm value of the quoted manufacturing companies in Nigeria. According to Sun and Lan (2014) studied that revealed that firm value is negatively related with real-based earnings management. Thus, Roychowdhury (2006) opined that it was a difficulty in detecting earnings management from real activity makes investors not to involve in speculation of an investment

in the company. Real earnings management can reduce the value of the firm because it gives a negative effect on future cash flows. Contrary to the belief by Liu and Tsai (2015) and Young *et al*. (2015) it was discovered that there is a positive relationship between firm value and real earnings management.

The probability value revealed that the accrual-based earnings management captured by abnormal discretionary accrual earnings (ADA) and real-based earnings management proxied by abnormal cash flow of operation activities (ACF) in the model were statistically significant in examining the return on equity (ROE) a measured of firm value of the quoted manufacturing companies in Nigeria.

A thorough examination of the result on individually selected quoted manufacturing companies showed that accrual-based earnings management captured by abnormal discretionary accrual earnings (ADA) and real-based earnings management proxied by abnormal cash flow of operation activities (ACF) influence the return on equity (ROE) a measured of firm value of the Flour Mills (FLRM), Guinness Nigeria (GUIN), NASCOM (NASC), Nigerian Breweries (NIGB) and PZ Cussion (PZCU). While, on the other hand, accrual-based earnings management captured by abnormal discretionary accrual earnings (ADA) and real-based earnings management proxied by abnormal cash flow of operation activities (ACF) reduced the return on equity (ROE) a measured of firm value of the Dangote Cement (DCEM), Dangote Flour (DFLR), Dangote Sugar (DSUG), Honey Well (HWEL) and Unilever (UNIL) respectively in Nigeria. Hence, this study concluded that the practice of earnings management constructively benefits the manipulator of accounts. It can be emphasized that ease in detecting accrual earnings management can make investors to decide whether a company is worthy of their investment. Also, if there are difficulties in detecting earnings management from real activity, it would be impossible for the investors to invest or being involved in speculative investment in the company. The management of Dangote Cement (DCEM), Dangote Flour (DFLR), Dangote Sugar (DSUG), Honey Well (HWEL) and Unilever (UNIL) should engage in earnings management that can boost and attract investors' investment to their company.

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Appendix

Descriptive analysis

	ROE	ADA	ACF
Mean	1.77229	0.81415	0.39076
Median	0.84846	0.54085	0.16215
Maximum	2.04808	1.74877	1.03291
Minimum	0.78733	0.28720	0.13432
Std. Dev.	2.06468	3.21607	1.75424
Skewness	2.03663	2.54711	4.19180
Kurtosis	3.83986	5.18536	6.21124
Jarque-Bera	30.25329	79.19084	37.48165
Probability	0.000000	0.000000	0.000000
Sum	3.54E+05	4.28E+04	781518.58
Sum Sq. Dev.	8.48E+11	2.06E+10	6.12E+09
Observations	100	100	100

Dependent Variable: ROE
Method: Panel Least Squares
Date: 05/25/19 Time: 10:12
Sample: 2008 2017
Periods included: 10
Cross-sections included: 10
Total panel (balanced) observations: 100

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	7.221640	5.096640	1.416945	0.2924
ADA	0.310411	0.040984	7.573133	0.0000
ACF	-0.251079	0.061885	-4.057188	0.0000

R-squared	0.650003	Mean dependent var	17722965
Adjusted R-squared	0.626145	S.D. dependent var	20646803
S.E. of regression	12791945	Akaike info criterion	35.58142
Sum squared resid	3.22E+16	Schwarz criterion	35.63089
Log likelihood	-3555.142	Hannan-Quinn criter.	35.60144
F-statistic	16.71223	Durbin-Watson stat	0.507728
Prob(F-statistic)	0.000000		

Dependent Variable: ROE
Method: Panel EGLS (Cross-section weights)
Date: 05/25/19 Time: 10:14
Sample: 2008 2017
Periods included: 10
Cross-sections included: 10
Total panel (balanced) observations: 100

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	9.315828	6.007616	1.550670	0.1023
ADA	0.383066	0.094426	4.056977	0.0000
ACF	-0.122513	0.039394	-3.110353	0.0010

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.689197	Mean dependent var	17722965
Adjusted R-squared	0.646883	S.D. dependent var	20646803
S.E. of regression	12111724	Akaike info criterion	35.56071
Sum squared resid	2.61E+16	Schwarz criterion	35.92353
Log likelihood	-3534.071	Hannan-Quinn criter.	35.70754
F-statistic	19.06150	Durbin-Watson stat	0.503484
Prob(F-statistic)	0.000000		

CROSSID	Effect
DCEM	-2.576306
DFLR	-1.213262
DSUG	-4.094481
FLRM	1.286633
GUIN	0.726372
HWEL	-3.694061
NASC	0.142890
NIGB	1.770894
PZCU	0.921901
UNIL	-3.796583

Redundant Fixed Effects Tests
Equation: Untitled
Test cross-section and period fixed effects

Effects Test	Statistic	d.f.	Prob.
Cross-section F	3.970937	(19,169)	0.0000
Cross-section Chi-square	73.820617	19	0.0000
Period F	13.626498	(9,169)	0.0000
Period Chi-square	109.123250	9	0.0000
Cross-Section/Period F	6.822901	(28,169)	0.0000
Cross-Section/Period Chi-square	151.263971	28	0.0000

Cross-section fixed effects test equation:
Dependent Variable: ROE
Method: Panel EGLS (Cross-section weights)
Date: 05/25/19 Time: 10:18
Sample: 2008 2017
Periods included: 10
Cross-sections included: 10
Total panel (balanced) observations: 100

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	7.477021	0.951193	7.860699	0.0000
ADA	0.492559	0.024151	20.39460	0.0000
ACF	-0.774026	0.441098	-1.754772	0.0809

Effects Specification
Period fixed (dummy variables)

R-squared	0.742003	Mean dependent var	17722965
Adjusted R-squared	0.726908	S.D. dependent var	20646803
S.E. of regression	10789659	Akaike info criterion	35.28420
Sum squared resid	2.19E+16	Schwarz criterion	35.48210
Log likelihood	-3516.420	Hannan-Quinn criter.	35.36429
F-statistic	49.15371	Durbin-Watson stat	0.647264
Prob(F-statistic)	0.000000		

Dependent Variable: ROE
Method: Panel EGLS (Cross-section random effects)
Date: 05/25/19 Time: 10:20
Sample: 2008 2017
Periods included: 10
Cross-sections included: 10
Total panel (balanced) observations: 100
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3.732422	2.135765	1.747556	0.3402
ADA	0.217161	0.046473	4.672811	0.0000
ACF	-0.091632	0.024072	-3.805737	0.0003

Effects Specification	S.D.	Rho
Cross-section random	4067620.	0.2104
Idiosyncratic random	12111724	0.7896

Weighted Statistics			
R-squared	0.541923	Mean dependent var	12149580
Adjusted R-squared	0.523765	S.D. dependent var	17010238
S.E. of regression	12186203	Sum squared resid	2.93E+16
F-statistic	95.36842	Durbin-Watson stat	0.532767
Prob(F-statistic)	0.000000		

Unweighted Statistics			
R-squared	0.618662	Mean dependent var	17722965
Sum squared resid	3.23E+16	Durbin-Watson stat	0.481805

CROSSID	Effect
DCEM	-0.767983
DFLR	-2.138024
DSUG	0.340841
FLRM	1.332423
GUIN	0.746151
HWEL	-0.587412
NASC	1.583451
NIGB	0.834231
PZCU	1.081060
UNIL	-0.326092

Correlated Random Effects - Hausman Test
Equation: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	2.130262	2	0.1912

Cross-section random effects test comparisons:

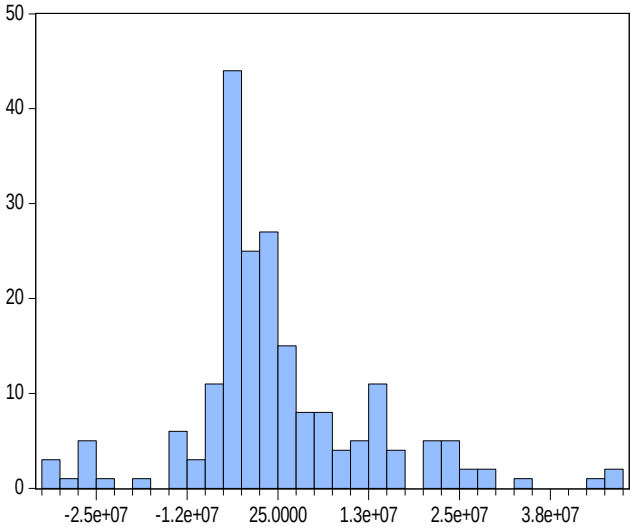
Variable	Fixed	Random	Var(Diff.)	Prob.
ADA	2.883060	3.781611	0.181154	0.0013
ACF	0.253513	-0.546321	3.064631	0.6196

Cross-section random effects test equation:
Dependent Variable: ROE
Method: Panel EGLS (Cross-section random effects)
Date: 05/25/19 Time: 10:23
Sample: 2008 2017
Periods included: 10
Cross-sections included: 10
Total panel (balanced) observations: 100

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	9.315282	1.678246	5.550607	0.0000
ADA	3.883006	0.550236	7.056977	0.0000
ACF	0.235513	2.134184	0.110353	0.9123

Effects Specification			
Cross-section fixed (dummy variables)			
R-squared	0.692197	Mean dependent var	17722965
Adjusted R-squared	0.655883	S.D. dependent var	20646803
S.E. of regression	12111724	Akaike info criterion	35.56071

Sum squared resid	2.61E+16	Schwarz criterion	35.92353
Log likelihood	-3534.071	Hannan-Quinn criter.	35.70754
F-statistic	19.06150	Durbin-Watson stat	0.503484
Prob(F-statistic)	0.000000		



Series: Standardized Residuals
Sample 2007 2016
Observations 200

Mean	2.33e-10
Median	-2549162.
Maximum	45827017
Minimum	-30631025
Std. Dev.	12749940
Skewness	0.757764
Kurtosis	4.953540
Jarque-Bera	50.94284
Probability	0.000000

Cross-Section Dependence Test
Series: ROE
Null hypothesis: No cross-section dependence (correlation) in weighted residual
Sample: 2008 2017
Periods included: 10
Cross-sections included: 10
Total panel (balanced) observations: 100
Note: non-zero cross-section means detected in data
Test employs centered correlations computed from pair wise samples

Test	Statistic	d.f.	Prob.
Breusch-Pagan LM	194.6124	90	0.0000
Pesaran scaled LM	30.21401		0.0000
Bias-corrected scaled LM	29.19302		0.0000
Pesaran CD	17.65462		0.0000