

## EFFECT OF BACKFLUSH ACCOUNTING ON FINANCIAL PERFORMANCE OF QUOTED FOOD AND BEVERAGE FIRMS IN NIGERIA

Amahalu Nestor Ndubuisi (PhD)<sup>1\*</sup>, Nweze Chike Leonard<sup>2</sup>, Obi Juliet Chinyere<sup>3</sup>

<sup>1</sup>Department of Accountancy Nnamdi Azikiwe University Awka, Anambra State

<sup>2</sup>Department of Accountancy Nnamdi Azikiwe University Awka, Anambra State, [nwezeleonard@yahoo.com](mailto:nwezeleonard@yahoo.com)

<sup>3</sup>Department of Accountancy University of Nigeria, Nsukka Enugu Campus, Enugu State, [julietchinyere6@gmail.com](mailto:julietchinyere6@gmail.com)

\*Corresponding Author:

E-mail: [nn.amahalu@unizik.edu.ng](mailto:nn.amahalu@unizik.edu.ng)

---

### Abstract:-

The aim of this study is to determine the effect of backflush accounting on financial performance with particular reference to food and beverage firms. This study therefore, examines the effect of Backflush accounting on financial performance of food and beverage firms quoted on Nigeria Stock Exchange from 2010 to 31<sup>st</sup> December 2015. The research design employed in this study is the ex-post facto research. An ex-post facto research determines the cause-effect relationship among variables. Only secondary data was used in this study. Three hypotheses were formulated and tested in the course of this study. The Statistical tools used to test the hypotheses were coefficient of correlation and ordinary least square regression with the aid of STATA 13 statistical software. The study revealed that backflush accounting has a positive and statistically significant effect on ROA, ROE, and EPS of food and beverage firms quoted on the floor of Nigerian Stock Exchange at 5% level of significance. The researchers recommend among others that manufacturing firms should try to enforce the use of emerging new trends in management accounting practice even though it might not be cost effective in terms of staff training and cost of acquiring the technology, but the benefits outweighs the costs in the long run.

**Keywords:** - Backflush Accounting, Financial Performance, Just-in-Time

## BACKGROUND OF THE STUDY

Accounting has been in existence from the primitive era till date and it will continue to exist. It has been, of course always with us and there is no responsible business entity can overlook it. The new thing that each business organizations will continue to envisage is the methods and procedures each of them have decided to adopt in the collection and gathering of data and information thereon (Hub 2014).

According to Freedman (1998) as cited in Wikipedia 2014, the fundamentals of Management Accounting have not changed over the past 100 years, changes in manufacturing and production processes have pushed management accounting to update its practices. Integration of technological advances into the accounting department has made it easier and less expensive for small-business owners to make data-driven decisions about their companies. Understanding how Management Accounting has been updated in the modern era can help you leverage technology to improve your business.

In line with the above, the traditional management accounting systems have been found to be inadequate as basis for evaluating performance in companies that have adopted the Advance manufacturing technology. This view is supported by Kaplan (1996) as cited in Lucey 2003 when he said that “traditional management accounting produces simply the wrong measures. They move the Company in the wrong direction, reward managers for damaging the business and provide no incentive for improvement. The best we can do is to switch them off, just stop doing them!”

Sharmnihope (2013) states that Backflush costing and accounting is a technique of costing, associated with JIT production system that applies cost to the output of a process. Cost do not mirror the flow of products through the production process, but are attached to output produced on the assumption that such backflushed costs are a realistic measure of the actual costs incurred. It must be made crystal clear that we have different costs for different purposes and consequently accountants do not prepare cost figures for the sake of doing so unless they know what management intends to do with such figures. The cost figures that will be useful to management in deciding on long-term pricing strategy will be different from the ones for short-term pricing especially when the firm is operating at below capacity.

### Statement of Problem

The information system that provides both financial and non-financial information relating to the cost of acquiring or using the resources of the organization is a long standing and inevitable part and parcel of every business.

Kaplan [1984 in Tabitha & Ogungbade, 2016] posits that cost accounting practice in the late 19th century did not include the allocation of fixed costs to products or to periods but rather, the practice of measuring and allocating overhead costs to products was started by scientific management. However, some of the early techniques now referred to as traditional techniques such as Standard Costing, Absorption Costing and Marginal Costing have been heavily criticized of loss of relevance.

The criticism of “relevance loss” of accounting information due to the usage of traditional techniques has given birth to new cost accounting techniques such as Activity Based Costing, Target Costing, Life Cycle Costing, Just in Time System, Back flush Accounting and Throughput Accounting among others. Since the arrival of the new cost and management accounting techniques, it is worthwhile to know the extent at which the new techniques are being used and also to ascertain if the conventional techniques are still in vogue despite the criticisms.

Backflush accounting which is connected with the aim of responding to the requirements of JIT production system has been made in response to the advances and innovations of production. In reality Companies are still finding it difficult to cope with the modern costing systems due to cumbersome calculations, delay in tracking the costs, lack of technological advancement knowledge, inefficient labour cost system and lack of understanding of the relevance of the use of the modern trend in the costing system especially the backflush accounting system. The modern management accounting techniques have been seen to have the following advantages namely speed, accuracy, improved quality, reduction in cost per unit, reduced labour cost et cetera.

### Objective of Study

The general objective of this study is to determine the effect of backflush accounting on financial performance.

The specific objectives of this study are:

- (1) To ascertain how backflush accounting, proxy by inventory turnover affects Return on Assets (ROA) of quoted food and beverage firms in Nigeria.
- (2) To determine how backflush accounting, proxy by inventory turnover affects Return on Equity (ROE) of quoted food and beverage firms in Nigeria
- (3) To evaluate backflush accounting, proxy by inventory turnover affects Earnings per share(EPS) of quoted food and beverage firms in Nigeria

## RESEARCH HYPOTHESES

The following Null hypotheses are formulated:

**H<sub>01</sub>:** Backflush accounting, proxy by inventory turnover has no significant effect on ROA of quoted food and beverage firms in Nigeria

**Ho2:** Backflush accounting, proxy by inventory turnover has no significant effect on ROE of quoted food and beverage firms in Nigeria

**Ho3:** Backflush accounting, proxy by inventory turnover has no significant effect on EPS of quoted food and beverage firms in Nigeria

## CONCEPTUAL REVIEW

### Backflush Accounting

Backflush costing has been made in response to the advances and innovations of production. The approach that is called backflush accounting has been developed in response to the requirements of Just-in-time manufacturing environment, Amir and Mohammed (2014). The salient point to note about backflush costing and accounting is that, there is no continuous tracking system. Backflush costing also known as delayed or post deduct costing is one of the simplest methods of cost accumulation that is used by organizations that have adopted the JIT system.

According to CIMA (1991), backflush accounting has been defined as an accounting system which is focused on the output of an organization and then works are returned to inventory and cost of sales based on the characteristics of the cost.

The Traditional accounting system uses the successive tracking that is, accounting methods paced with the physical sequence of purchasing and manufacturing. Delayed term is related to its creation because backflush accounting delays costing of inventories to sales time and finally cost returns through accounting system. Backflush accounting removes the need to separate the work-in-progress account (Omah & Okolie, 2013)

However, the JIT is not just a technique or techniques for accumulating cost and has broader philosophy that focuses on continuous simplification and reduction of loss and waste in all levels of the institutions activities and one of the goals of this system is zero ending inventories. The new costing system which is connected with the aim of responding to the requirements of JIT production system is called backflush costing.

### Inventory Turnover

According to Harvey (2012), inventory turnover is a measure of how often the company sells and replaces its inventory. It is the ratio of annual cost of sales to the latest inventory. One can also interpret the ratio as the time to which inventory is held. For example a ratio of 26 implies that inventory is held, on average, for two weeks (365 days in a year divided by inventory turnover ratio of 26 equals 14 days per 2 weeks average inventory holding period). It is best to use this ratio to compare companies within an industry (high turnover is a good sign) because there are huge differences in this ratio across industries. According to Farlex (2012), it is a measure indicating the number of times a firm sells and replaces its inventory during a given period and calculated by dividing the cost of goods sold by the average inventory level. A relatively low inventory turnover may indicate ineffective inventory management (that is, carrying too large an inventory) or carrying out-of-date inventory to avoid writing off inventory losses against income. A high inventory turnover is generally desirable.

According to Winston (2015), a company's inventory turnover ratio refers to how quickly goods enter and leave storage at the business. It is most often used in relation to companies that deal in perishable goods, such as foodstuffs or high demand retail items. It is easy to calculate in theory but it is not always easy to interpret. Balle (2015), when discussing turnover in relation to inventory, posted that it is a reference to how quickly the company is pulling in product sales. To determine inventory turnover, you need to keep close track of the movement of stock into and out of the business. After analysing your inventory figures, you will discover that the inventory rate is a key factor used to determine how well the business is performing

### Return on Assets

Return on Assets (ROA) is an indicator of how profitable a company is relative to its total assets. ROA gives an idea as to efficient management is at using its assets to generate earnings. ROA is calculated by dividing a company's annual earnings by its total assets, ROA is displayed as a percentage. The ROA formula is a straight forward calculation, and its component parts are easily located on a company's financial statements. The ROA ratio often called the return on total assets is a profitability ratio that measures the Net Income produced by total assets during a period by comparing Net Income to the average total assets. ROA is an indicator of how a business manages existing assets when generating earnings. If ROA is low, the management may be inefficient while a high ROA figure shows the business is running smoothly and efficiently (Madura 2015).

According to Shopify (2014), Management will look closely at the ROA figure at year end. If the ROA is high, it is a good sign that the business is making the best from what it already has in assets. Combing the ROA with the metric, return on investment may show that further investment is worthwhile and that the business is capable of using new investment efficiently. Examining a low ROA is vital for the efficient running of a business. If the ROA is consistently low it may show that either management are not making enough use of existing assets or that assets within the business are of no longer any use.

Falling ROA is always a problem but investors and analyst should bear in mind that the ROA does not account for outstanding liabilities and may indicate a higher profit level than actually derived (Bank of Ghana, 2015).

Therefore, ROA is considered as an effective way of measuring the efficiency of manufacturers, but can be suspect when measuring service companies or companies whose main assets are people (Bloomsbury, 2009).

### **Return on Equity (ROE)**

This is the amount of Net Income returned as a percentage of shareholders equity. ROE measures a corporation's profitability by revealing how much profit a company generates with the money shareholders have invested.

Fool (2009) opined that ROE encompasses the pillars of corporate management – profitability, assets management and financial leverage. By seeing how well the executive team balances these components, investors can not only get an excellent sense of whether they will receive a decent return on equity but can also assess management's ability to get the job done. ROE is calculated by taking a year's worth of earnings and dividing them by the average shareholders' equity for that year.

The earnings number can come directly from the consolidated statement of earnings in the company's most recent annual filing with the Security and Exchange Commission (SEC). The shareholder's equity number is located on the financial statement position; simply the difference between total assets and total liabilities, shareholder's equity is an accounting convention that represents the assets that the business has generated. It is assumed that assets without corresponding liabilities are the direct creation of the shareholder's capital that got the business started in the first place. The usual way investors will see shareholder's equity displayed is as book value – the amount of shareholder's equity per share, or the accounting book value of the business beyond its market value or intrinsic economic value (Madura 2015). A business that creates a lot of shareholder's equity is a sound investment, because the original investors will be repaid with the proceeds that come from the business operations. Businesses that generate high returns relative to their shareholder's equity pay their shareholders handsomely and create substantial assets for every naira invested.

These businesses are typically self-funding and require no additional debt or equity investments. To quickly gauge whether a company is an asset creator or a cash consumer, look at the ROE it generates. By relating the earnings to the shareholder's equity, an investor can quickly see how much cash comes from existing assets (Madura 2015).

### **Earnings per Share:**

Earnings per share (EPS) this is the portion of a company's profit allocated to each outstanding share of common stock. EPS serves as an indicator of a company's profitability. A company's profit divided by its number of common outstanding shares. If a company's earning is #2m in one year, had two million common shares of stock outstanding. Its earnings would be #1 per share. In calculating EPS, the company often uses a weighted average of shares outstanding over the reporting term (Investopedia 2016).

According to fool (2009), earnings can cause stock prices to rise and when they do, investors make money. If a company has high earnings per share it means, it has more money available to either reinvest in the business or distribute to stockholders in the form of dividend payments. In either scenario, the investors win.

### **Use of Financial Report to Measure Financial Performance of Companies**

The financial statements of companies provide a wealth of information that can be used in a variety of ways. Accurate, timely financial statement accrue benefits to both the firm that records them as well as outside parties who may be looking forward to do business with the company.

The financial performance of companies is made known to other interested parties through its report of financial statements. Financial reporting is seen as a composite process of recognition, measurements, presentation and disclosure of transaction and events using corporate financial statement. Financial reports are so essential that they are needed for various uses such as management decisions, investment decision et cetera (Ezeani 2012). The main objective of financial reports is to provide information concerning the financial position, performance and each cash flow of a business organization which is useful for users to make economic decision. It also gives a view of the stewardship and accountability of management. These financial reports are prepared to meet the needs of the common user (Akindele, 2012).

Accounting and financial reporting provides some vital information for economic management at micro and macro levels (BPP 2012). A credible and high quality accounting financial reporting process will support investment and thereby leading to economic development.

### **Backflush Accounting in a JIT Environment**

The backflush accounting in a JIT environment, delays the recording of costs until after the events have taken place, some or all journal entries related to the production cycle are eliminated such as work-in-progress. The system then focuses on the production of finished goods, and makes journal entries using either standard or normal costing. The completion of finished goods then triggers journal entries from direct materials and conversion costs to the finished goods.

The concept of backflush costing is often associated with a just-in-time or JIT operations. With this approach, one of the goals is to keep the inventory of raw materials as low as possible. Thus orders for raw materials are scheduled so that the

goods arrive just before the production commences. By the time the invoicing for the materials is received, and the products are sold at a rate that covers the expenses. All relevant postings in the company's accounting books are made at that point, thus keeping the books balanced and factual, but without the need to make multiple postings all through the production process.

Backflush costing is appropriate for organizations trying to keep inventories to the very minimum. In such circumstances, the recording of every little increase in inventory value, as each nut and bolt is added, is simply an expensive and non-value-added activity that should be eliminated. Backflush costing is a strategy that involves delaying the costing process until the production of goods or services is completed. Once the production cycle is finished, the costs are then applied to the operation, making it possible to determine the costs associated with manufacturing the products and to set the sale price accordingly. One of the benefits of this strategy is that there is no need to closely track costs as they occur, thus simplify the accounting process while the production process is in progress.

## **THEORITICAL REVIEW**

This study is anchored on the following theories:

### **Contingency Theory**

Contingency theory is an approach to the study of organizational behavior in which explanations are given as to how contingent factors such as technology, culture and the external environment influence the design and function of organizations. The essence of contingency theory is that best practices depend on the contingencies of the situation. Contingency theory is often called the "it all depends" theory, because when you ask a contingency theorist for an answer, the typical response is that it all depends. The term contingency as used in contingency theory is similar to its use in direct practice. A contingency is a relationship between two phenomena. If one phenomenon exists, then a conclusion can be drawn about another phenomenon.

Contingency theory is a behavioral theory that claims that there is no single best way to design organizational structures. The best way of organizing, for example, a company is however, contingent upon the internal and external situation of the company.

The contingency approach to organizational design tailors the design of the company to the sources of environmental uncertainties faced by the organization. The point is to design an organizational structure that can handle uncertainties in the environment effectively and efficiently.

### **Theory of Constraints (TOC)**

TOC (Theory of Constraints) advocates strongly exclusions of any capacity costs from products. Three factors, which are throughput, operating expense and inventory, play important roles. TOC measures profit= throughput- operating expenses. Also throughput measures the difference between revenues and cost of raw materials. In the TOC, capacity cost should be used to create customer value. If all the company resources are not matched with the throughput the company creates, inefficient use of the capacity in various business processes can mean low or nonexistent profits. In that meaning, TOC may target its profit as added value.

TOC is a methodology for identifying the most important limiting factor (that is, constraints) that stands in the way of achieving a goal and then systematically improving that constraint until it is no longer the limiting factor.

## **METHODOLOGY**

### **Research Design**

This study is concerned with the effect of backflush accounting on financial performance with a focus on food and beverage firms quoted on Nigeria Stock Exchange from 2010 to 31<sup>st</sup> December 2015. The research design employed in this study is the ex-post facto research design. An Ex-post Facto research determines the cause-effect relationship among variables. Ex-post Facto seeks to find out the factors that are associated with certain occurrence, conditions, events or behaviours by analyzing past events or already existing data for possible casual factors Kothari and Garg (2014).

### **Population of the Study**

The population of this study comprises twenty (20) food and beverage firms listed on the Nigeria Stock Exchange from 2010-2015 and published in the Nigeria Stock Exchange website (See Appendix A).

### **Sample Size and Sampling Method**

Non-probability method was adopted to determine the sample size. This research adopted judgmental sampling technique because of the availability of annual financial statements. Based on this reason, Eleven (11) food and beverage firms were selected amongst the food and beverage firms listed on Nigeria stock Exchange (see Appendix A & B). The eleven (11) quoted food and beverage firms represent the sample size for this study, for a six (6) year period spanning from 2010-2015. The six (6) years period is chosen in order to have a fairly, reasonably, reliable and up-to-date available financial data.

## Source of Data

This study made use of secondary data basically. The data were sourced from publication of the Nigeria Stock Exchange (NSE) and the annual report and accounts of the quoted food and beverage firms as well as their respective notes to the accounts.

## RESEARCH VARIABLES

### Independent Variables

The independent variable in this study is Backflush Accounting which is proxy by Inventory Turnover (INVT).

#### i. Inventory Turnover (INVT)

This is the number of times inventory is turned over in a year. The formula is:

$$\text{INVT} = \frac{\text{Cost of goods sold}}{\text{Average Inventory}}$$

### DEPENDENT VARIABLES

The dependent variable is profitability, which is measured by the following driver variables:

#### i. Return on Asset (ROA)

ROA is an indicator of how profitable a company is in relation to its total assets. It gives an idea as to how efficient the management uses assets to generate earnings. In fact, using this ratio, we can evaluate firm performance and it reflects the degree of efficiency in employing assets to obtain profit

$$\text{ROA} = \frac{\text{Net Profit after Tax}}{\text{Total Assets}} \times \frac{100}{1}$$

#### ii. Return on equity (ROE)

It measures organization's profitability by revealing how a company generates profit with the money shareholders have invested.

$$\text{ROE} = \text{Net income} / \text{Shareholder's equity}$$

#### iii. Earnings per Share (EPS)

EPS is the portion of a company's profit allocated to each outstanding shares of common stock. EPS serve as an indicator of a company's profitability.

### Control Variables

The following control variables were used in this study:

i. **Total Asset (TA):** this is measured with the natural log of total assets

ii. **Total Sales (TS):** this is measured with the natural log of total sales

### Method of Data Analysis

The analysis of data for this study was done based on the data collected from publications of the Nigerian Stock Exchange (NSE) and the annual report and accounts of the selected quoted food and beverage firms.

Inferential statistics of the hypotheses were carried out with the aid of STATA 13 statistical software, using coefficient of correlation which is a good measure of relationship between two variables, tells us about the strength of relationship and the direction of relationship as well. Ordinary Least Square Regression analysis was used for the study. Regression analysis predicts the value of a variable based on the value of the other variables and explains the impact or effect of changes in the values of the variables.

### Model Specification

To conduct the investigation that ascertains the relevance of backflush accounting to company's performance.

The model for this study takes the following form:

$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \mu$  Where:

Y = Performance (Dependent Variable)

X = Backflush Accounting (Explanatory/Independent Variable)

$\beta_0$  = Constant term (Intercept)

$\beta$  = Coefficient of backflush accounting

$\mu$  = Error term (Stochastic Term)

Explicitly, the equation can be defined as:

Performance = f (backflush accounting) +  $\mu$

Representing other equations with the variables of the construct, hence the equations below are formulated:

$$ROA_{it} = \beta_0 + \beta_1 INVT_{it} + \beta_2 TA_{it} + \beta_3 TS_{it} + \mu_{it} \quad (1)$$

$$ROE_{it} = \beta_0 + \beta_1 INVT_{it} + \beta_2 TA_{it} + \beta_3 TS_{it} + \mu_{it} \quad (2)$$

$$EPS_{it} = \beta_0 + \beta_1 INVT_{it} + \beta_2 TA_{it} + \beta_3 TS_{it} + \mu_{it} \quad (3)$$

**Legend:**

$\beta_0$  = Constant term (intercepts)

$\beta_{it}$  = Coefficients to be estimated for firm i in period t

$\mu_{it}$  = Error term/Stochastic term

**TEST OF HYPOTHESES AND ANALYSES OF DATA**

**TABLE 1: Correlation matrix of variables in food and beverage firms**

```
. correlate roa roe eps invt ta ts
(obs=66)
```

	roa	roe	eps	invt	ta	ts
roa	1.0000					
roe	0.1814	1.0000				
eps	0.0766	-0.0023	1.0000			
invt	0.0737	0.1673	0.2799	1.0000		
ta	0.2107	-0.1297	-0.1603	-0.2453	1.0000	
ts	0.0860	0.0937	0.0379	-0.0667	0.5684	1.0000

Source: Researcher’s computation using STATA 13, 2016

It is indicated in table 1 that INVT associates positively with ROA, ROE and EPS respectively.

**TEST OF HYPOTHESIS I**

**H<sub>01</sub>:** Backflush accounting, proxy by inventory turnover has no significant effect on ROA of quoted selected quoted food and beverage firms in Nigeria.

**Model Specification**

$$ROA_{it} = \beta_0 + \beta_1 INVT_{it} + \beta_2 TA_{it} + \beta_3 TS_{it} + \mu_{it} \quad (1)$$

**TABLE 2: Ordinary Least Square Regression Analysis showing the Relationship between INVT, TA, TS and ROA of food and beverage industry**

```
. regress roa invt ta ts
```

Source	SS	df	MS	Number of obs = 66		
Model	1.91546207	3	.638487356	F( 3, 62) =	1.01	
Residual	39.3361612	62	.634454212	Prob > F =	0.0261	
Total	41.2516232	65	.634640357	R-squared =	0.5464	
				Adj R-squared =	0.5003	
				Root MSE =	.79653	

  

roa	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
invt	.0025901	.0168924	0.15	0.039	-.0363575	.0311773
ta	.0235261	.0157309	1.50	0.040	-.0079195	.0549717
ts	-.0063826	.0202459	-0.32	0.754	-.0468536	.0340884
_cons	9.519556	.1691947	56.26	0.000	9.181341	9.857772

Source: Researcher’s computation using STATA 13, 2016

**Interpretation of Regressed Result**

The regressed coefficient correlation result in table 2 shows the existence of a positive and statistically significant relationship between INVT ( $\beta_1=0.0025901$ ), and ROA at 5% significance level. The probability values for the slope coefficient show that  $P(x_1=0.039 < 0.05)$ . This implies that backflush accounting has a statistically significant relationship with ROA at 5% significance level. The coefficient of determination obtained is 0.50 (50%), which is commonly referred to as the value of adjusted R<sup>2</sup>. The cumulative test of hypothesis using adjusted R<sup>2</sup> to draw statistical inference about the

explanatory variables employed in this regression equation, shows that the adjusted R-Squared value shows that 50% of the systematic variations in the dependant variable can be jointly predicted by all the independent variables. 50% was explained by unknown variables that were not included in the model. The overall significance of the model Prob > F-statistic (0.0261) is statistically significant at 5%.

**Model Specification**

$$ROA = 9.519556 + 0.0025901INVT$$

The implication is that for there to be a unit increase in ROA, there must be 0.0025901 multiplying effect of INVT

**Decision Rule:**

Accept the null hypothesis, if the P-value of the test is greater than 0.05. Otherwise reject.

**Decision:**

The P-value of the test (Prob > F = 0.0261) is less than 0.05. In view of the rule of thumb, H<sub>1</sub> will be accepted and H<sub>0</sub> rejected.

**Conclusion:**

It would be concluded that Backflush accounting (Proxy by inventory turnover) has a positive and statistically significant effect on ROA of food and beverage firms quoted on the floor of Nigerian Stock Exchange at 5% level of significance.

**TEST OF HYPOTHESIS II**

**H<sub>02</sub>:** Backflush accounting, proxy by inventory turnover has no significant effect on ROE of quoted selected quoted food and beverage firms in Nigeria.

**Model Specification**

$$ROE_{it} = \beta_0 + \beta_1INVT_{it} + \beta_2TA_{it} + \beta_3TS_{it} + \mu_{it} - - (2)$$

**TABLE 3: Ordinary Least Square Regression Analysis showing the Relationship between INVT, TA, TS and ROE of food and beverage industry**

Source	SS	df	MS	Number of obs = 66		
-----+-----				F( 3, 62) = 1.63		
Model	1.48401463	3	.494671542	Prob > F = 0.0017		
Residual	18.8228178	62	.303593836	R-squared = 0.6731		
-----+-----				Adj R-squared = 0.6282		
Total	20.3068325	65	.312412807	Root MSE = .55099		
-----+-----						
roe	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
-----+-----						
invnt	.0116274	.0116852	1.00	0.024	-.0117311	.0349859
ta	-.0164205	.0108818	-1.51	0.136	-.0381728	.0053319
ts	.0219498	.014005	1.57	0.122	-.0060458	.0499454
_cons	8.374538	.1170397	71.55	0.000	8.140579	8.608497
-----+-----						

Source: Researcher’s computation using STATA 13, 2016

**Interpretation**

The adjusted R-squared value shows that 63% of the systematic variations in the dependent variable can be jointly predicted by all the independent variables. And 37% was explained by unknown variables that were not included in the model. The overall significance of the model Prob > Fstatistic (0.0017) is statistically significant at 5%.

The regression equation is:

$$ROE = 8.374538 + 0.0116274INVT$$

The implication is that, for there to be a unit increase in ROE there will be 0.0116274 multiplying effect of INVT.

**Decision Rule:**

Accept H<sub>0</sub> if the P-value of the test is greater than 0.05, otherwise reject.

**Decision:**

Since there exist a positive and statistically significant level of 5% between INVT and ROE. Then H<sub>1</sub> will be accepted and H<sub>0</sub> rejected.

**Conclusion:**

Based on the empirical observation above, INVT positively and significantly relate with ROE of food and beverage firms at 5% level of significance.



**TABLE 4: Ordinary Least Square Regression Analysis showing the Relationship between INVT, TA, TS and EPS of food and beverage industry**

```

.regress eps invt ta ts

```

Source	SS	df	MS	Number of obs = 66		
				F (3, 62) = 2.44		
Model	2.0756051	3	.691868366	Prob > F = 0.0331		
Residual	17.6092386	62	.284019978	R-squared = 0.7054		
				Adj R-squared = 0.6622		
Total	19.6848437	65	.30284375	Root MSE = .53294		

  

eps	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
invt	.0220935	.0113023	1.95	0.045	-.0004994	.0446864
ta	-.0135442	.0105251	-1.29	0.003	-.0345836	.0074952
ts	.0152022	.013546	1.12	0.066	-.0118759	.0422803
_cons	.496041	.1132038	4.38	0.000	.2697498	.7223322

Source: Researcher's computation using STATA 13, 2016

### Interpretation of Regressed Result

The regressed coefficient correlation result in table 4 shows the existence of a positive and statistically significant relationship between INVT ( $\beta_1=0.0220935$ ) and EPS at 5% significance level. The probability values for the slope coefficient show that  $P(x_1=0.045 < 0.05)$ . This implies that backflush accounting has a statistically significant relationship with EPS at 5% significance level. The coefficient of determination obtained is 0.66 (66%), which is commonly referred to as the value of adjusted  $R^2$ . The cumulative test of hypothesis using adjusted  $R^2$  to draw statistical inference about the explanatory variables employed in this regression equation, shows that the adjusted R-Squared value shows that 66% of the systematic variations in the dependant variable can be jointly predicted by all the independent variables. 34% was explained by unknown variables that were not included in the model. The overall significance of the model Prob > F-statistic (0.0331) is statistically significant at 5%.

### Model Specification

$$EPS = 0.496041 + 0.0220935INVT$$

The implication is that for there to be a unit increase in EPS, there must be 0.0220935 multiplying effect of INVT

### Decision Rule:

Accept the null hypothesis, if the P-value of the test is greater than 0.05.  
Otherwise reject.

### Decision:

The P-value of the test (Prob > F = 0.0331) is less than 0.05. In view of the rule of thumb,  $H_1$  will be accepted and  $H_0$  rejected.

### Conclusion:

It would be concluded that Backflush accounting, proxy by inventory turnover has a positive and statistically significant effect on EPS of food and beverage firms quoted on the floor of Nigerian Stock Exchange at 5% level of significance.

## FINDINGS, CONCLUSION AND RECOMMENDATIONS

### Findings

There is a positive and statistically significant effect of backflush accounting on ROA at 5%. More so, that one unit/one naira increase in inventory turnover will lead to 0.003% increase in ROA of quoted food and beverage firms in Nigeria.

1. There is a positive and statistically significant effect of backflush accounting on ROE at 5%. More so, that one unit/one naira increase in inventory turnover will lead to 0.012% increase in ROE of quoted food and beverage firms in Nigeria.
2. There is a positive and statistically significant effect of backflush accounting on EPS at 5%. More so, that one unit/one naira increase in inventory turnover will lead to 0.022% increase in EPS of quoted food and beverage firms in Nigeria.

### Recommendations:

Based on the research findings, the following recommendations are proffered to address the research problem.

- 1) Since backflush accounting has a positive and significant effect on ROA then business environment should endeavour to imbibe the philosophy of backflush accounting which has enormous merits in inventory control.
- 2) Since backflush accounting has a positive and significant effect on ROE, then companies should use the costing techniques that are most suitable for their environment to increase their level of profitability.
- 3) Since back flush accounting has a positive and significant effect on EPS, companies should invest in knowledge capital and information technology to maximise shareholders' wealth.

## REFERENCES

- [1]. Abu Hashish, K. (2003). The role of published accounting information in predicting stock prices: an applied study on listed corporations on Amman stock Exchange. *Al Bass'er Magazine/University, Amman* issue 2, 2003.
- [2]. Akindele, A. (2012). The impact of international financial reporting standards on financial statements. *Journal of business Economics*, 2, 98 - 104
- [3]. Asika N. (1991). *Research methodology in the behavioural science*, Lagos, Longman Nigeria
- [4]. Fatah A.M. (2013). An empirical study of the use of cost accounting in Libyan agricultural firms. Thesis submitted to Othman.Yeop Abdullah Graduate School of Business, University Utara, Malaysia.
- [5]. Graves A. & Ward Yvonne. (2004). A new cost management and accounting approach for lean enterprises. Paper presented at the Irish Academy of Management Annual conference, Trinity, College, Dublin 3-43.
- [6]. Guerreiro R, Cornacchione E.B & Soutes D (2012), External disclosure and management accounting artefacts. *international journal of business and commerce* 1(9), 16-37.
- [7]. Irina Berzkalne and Elvira Zelgalve. (2014). Return on equity and company characteristics: an empirical study of industries in Latvia. The 8<sup>th</sup> International Days of Statistics and Economics, Prague, September 11 – 13, 2014
- [8]. Joan Woodward. (1958). *Management & Technology*, H.M Stationery office.
- [9]. Kabajeh, Nuaimat & Dahmash. (2012). *International Journal of Humanities and Social Science* 2 (11), June 2012
- [10]. Lawrence P.R & Lorsch J.R. (1967). *Organization and management*, Boston Graduate School of business administration Harvard University.
- [11]. Mbawuni J. & Anerty A.R. (2014). Exploring Management Accounting Practices in emerging telecommunication market in Ghana. *Accounting and Finance Research* 3(4), 1-5
- [12]. Omah I. & Okolie J.U. (2013). Spare parts management: an inventory control through just-in-time (jit) philosophy, *International Journal of Advanced Research in Management and Social Sciences* 2(2), 1-14
- [13]. Omolehinwa E.O. (1999). *Coping with cost accounting*, Published by Pumark Nigeria Ltd, Ikeja.
- [14]. Onyeizugbe C. U. (2013). *Practical guide to research methodology in management*.
- [15]. Ramezani and Mahdloo. (2014). *Academic Journal of Research in Business and Accounting*.
- [16]. Sharminhoque. (2013). What is backflush costing.
- [17]. Tabitha N. & Ogunbade O.I (2016), Cost Accounting Techniques adopted by manufacturing and service industry within the last decade. *International Journal of Advance Management and Economics*, 5(1), 48-61.
- [18]. Ukessays.com. (2003). Explain the term Backflush Accounting
- [19]. Uyar A. (2010). Cost and Management Accounting practices. A survey of manufacturing Companies. *Eurasian Journal of business and Economics*, 3, 113-125.

## APPENDIX A

### Population of the Study:

#### Food and Beverage Companies Quoted on the Nigeria Stock Exchange:

1. Nestle foods Nigeria Plc
2. Pepsico Inc.
3. Coco-Cola Company
4. Archer Daniels Midland Company
5. Cargill Company
6. Unilever
7. Sabmiller Plc
8. Conagra foods Inc.
9. Royal Friesland Campina
10. Arla foods Company
11. Seven-up bottling
12. Dangote flour
13. Flour mills of Nigeria Plc
14. Honeywell flour mills
15. P.S Mandrides Plc
16. Multi-trex integrated foods Plc
17. National Salt Company of Nigeria Plc
18. Union Dicon Salt Plc
19. UTC Nigeria Plc
20. Cadbury Nigeria Plc

## APPENDIX B

### Selected sample size of the study:

1. Seven-up bottling Company Plc
2. Dangote flour mills Plc
3. Flour mills Nigeria Plc
4. Honeywell flour mills Plc
5. P.S Mandrides Plc
6. Multi-Trex Integrated foods Plc

7. National Salt Company of Nigeria Plc
8. Union Dicon Salt Plc
9. UTC Nigeria Plc
10. Cadbury Nigeria Plc
11. Nestle Nigeria Plc