

Effect of Firms' Growth Variables on Corporate Valuation of Manufacturing Sector in Nigeria

UGBOR, Raphael Oluchukwu
Department of Accountancy, Faculty of Management Sciences,
Enugu State University of Science and Technology

ONYEKWELU, Uche Lucy, PhD*
Department of Accountancy, Faculty of Management Sciences,
Enugu State University of Science and Technology

ENEH, George, N.O
Department of Accountancy,
Enugu State College of Education (Technical), Enugu, in Affiliation with Nnamdi Azikiwe University, Awka

Abstract

The main objective of this study is to effect of firms' growth variables on corporate valuation of manufacturing sector in Nigeria. A sample of five (5) firms was selected from the thirty seven (37) manufacturing firms quoted on the Nigeria Stock Exchange Market (NSE). Secondary data were collected from the firms for ten years period (2007 to 2016). The data were analyzed using multiple regression analysis whereby sales growth, assets growth, cost of sales growth were the independent variables and proxies firm growth while net assets per share was the dependent variable and proxy for firm valuation. Findings show that sales growth, assets growth of manufacturing firms in Nigeria positively and strongly affect net assets per share of the firms during the period. Finding also shows that cost of sales growth of manufacturing firms in Nigeria positively, but insignificantly affects net assets per share of the firms. It was recommended that manufacturing firms in Nigeria should increase their sales in order to improve their net assets per share and hence their firm value, that Nigeria manufacturing firm managers can improve their firm net asset per share by increasing its total assets. Lastly, that manufacturing firms in Nigeria should improve their firm value by increasing its productivity.

Keywords: Firm, Growth Variables, Firm's Valuation, Manufacturing Sector, Niger

1.1 INTRODUCTION

Firm growth is an important stage of lifecycle for companies in general and for profit firms in particular. Ungerer, Gerber, and Volschenk (2015) states that firms that are both sustainable and able to grow rapidly are an important stimulus to any economy and essential for increasing employment opportunities. The sources of business growth have been subject to a considerable academic attention (Kim, 2008). Firm growth has been studied by researchers for many years. Different indices have been used by different authors to measure firm growth, but the events through which each firm passes remain more or less the same. Most of the researchers suggest that each firm has to start, then grow while facing various challenges and crises, and finally mature and decline (Titman and Wessels, 2008).

When a firm acquires or merges with another firm to grow, it is called acquired growth, but when a firm expands its internal facilities to grow it is called organic or sustainable growth. Firm growth has been identified as a very critical factor for firms' survival. Firm growth theories provided evidence to show that it is only firms that can grow that will survive in the market while firm that cannot grow will eventually die off and exit the market. Firm growth is one of the most analyzed fields in economics. The impact of firm growth on employment, industry concentration, firm survival and economic activity are reasons enough for it to be considered an issue of crucial interest.

Mercedes (2007) asserts that the study of firm growth is heterogeneous in nature, while some studies focus on firm size, some focus on internal characteristics and others on random variables. When firm growth is approached from internal characteristics perspective, many determinants or indices of firm growth are observed with each of them affecting firm growth on its own peculiar way. Kouser, Bano, Azeem and Hassan (2012) indicate that sales revenue, assets, firm profitability and number of employees of firm are possible firm internal growth variables. For the purpose of this study, however, we shall concentrate on sales growth, assets growth and cost of sales growth as firm growth indices.

The effect of sales growth, assets growth and cost of sales on firm valuation has not been a subject of uniformity in empirical research. Some researchers who studied the effect of these indices reported positive relationship between the indices and firm valuation while others ended on negative effect or relationship. For instance, Becker, Kaen, Eteban and Bauman (2010) explore the effect of firm size on firm profitability in the United States of America (USA) manufacturing sector. Total sales, total assets and total number of employees

were used as proxies for firm growth. Result reveals a negative and statistically significant relationship between the total assets, total sales, number of employees and profitability. In another study, Fattah and Makarani (2005) examined the relationship between measures of firm size and common stock return of companies listed in the Tehran Stock Exchange. Sales growth and net assets growth were used as proxies for firm growth while stock return was used as proxy for firm value. The result reveals positive and significant relationship between sales growth and net asset growth with stock returns.

In some other studies, Chen, Yao and Zhang (2008) examined the effect of corporate asset growth on stock returns using data on nine equity markets in the Pacific-Basin region, including Japan, China, Hong Kong, Taiwan, Korea, Malaysia, Singapore, Thailand, and Indonesia. A significantly negative relationship between asset growth and stock returns was observed. Also, using a sample of 265 firms in Greece, Maggina and Tsaklanganos (2012) examined asset growth and firm performance from 2008 to 2009. Result indicates that assets growth is predictable at an 85.7% rate in large companies in Greece and positively related with firm performance. Sumangala (2012) wished to ascertain the impact of profitability on firm valuation in India. Earnings per share were used as proxy for firm profitability while market value of stock was used as proxy for firm valuation. For the purpose of the study, a sample of 50 Indian firms was taken and data collected from the firms for five years. Result of the analysis suggests that earnings per share impact the market value of equity share in the Indian context.

It is against this backdrop that this study evaluated the effect of firms' growth variables on corporate valuation of manufacturing sector in Nigeria.

1.2 Statement of the Problem

Previous studies on firm growth and firm valuation are inconclusive. Some researchers are of the view that firm growth is beneficial to firm valuation and also to the economy at large. Such studies argue that firm growth is related to firm survival; in this case, it is only firms that can grow that will survive in the market while the firms that cannot grow will eventually die off and exit the market. It also argues by some studies that firm growth is associated with job creation because growing firms need more hands to sustain its growth. Firm growth is also related to innovation and technological development. This is based on the fact that a firm requires new technology in order to grow and therefore new technologies are a necessity for firm growth.

Opponents of firm growth asserts that firm growth can lead to firm rigidity whereby clients are treated in an impersonal manner while in small firms clients are treated according to their needs thereby increasing firm profitability and firm value. Opponents of firm size or firm growth also argue that managers and owners of large firms lose control as a result of delegation of authority and it becomes difficult to control activities in large firms. It also argues that large firms leads to cash flow problems because an increase in firm size requires additional funding to finance it. Therefore, firm need to borrow in order to finance growth otherwise it will run into liquidity problems.

This development implies that the study on firm growth is inconclusive and therefore requires more empirical studies. It is on this note that this study was conceived to investigate the effect of firm growth indices on firm valuation of manufacturing firms in Nigeria. In the light of the above, this study thus has appraised effect of firms' growth variables on corporate valuation of manufacturing sector in Nigeria.

1.3 Objectives of the Study

The main objective of this study is to investigate the effect of firms' growth variables on corporate valuation of manufacturing sector in Nigeria.

The specific objectives of the study are to:

- a. Evaluate the effect of sales growth on net assets per share of manufacturing firms in Nigeria.
- b. Appraise the effect of assets growth on net assets per share of manufacturing firms in Nigeria.
- c. Determine the effect of Cost of sales growth on net assets per share of manufacturing firms in Nigeria.

1.4 Research Questions

The above objectives are guided by the following research questions:

- i. What is the effect of sales growth on net assets per share of manufacturing firms in Nigeria?
- ii. How does assets growth affect net assets per share of manufacturing firms in Nigeria?
- iii. What is the effect of cost of sales growth on net assets per share of manufacturing firms in Nigeria?

1.5 Statement of the Hypotheses

The following hypotheses were formulated for the purpose of this study:

1. Sales growth does not significantly affect net assets per share of manufacturing firms in Nigeria.
2. Assets growth does not significantly affect net assets per share of manufacturing firms in Nigeria.

3. Cost of sales growth does not significantly affect net assets per share of manufacturing firms in Nigeria.

1.6 Scope of the Study

This study has x-rayed the effect of firms' growth variables on corporate valuation of manufacturing sector in Nigeria. Data for this study were collected from five (5) manufacturing firms listed in the NSE for a period of ten (10) years (2007 to 2016). Four (4) firms were selected from the consumer goods manufacturing sub-sector with a population of twenty two (22) firms while one (1) was selected from the industrial goods sub-sector with a population of sixteen (16) firms. The selected firms are Unilever Nigeria Plc., Nestle Nigeria Plc., Vitafoams Nigeria Plc., PZ Cussons Nigeria Plc., and Beta Glass Nigeria Plc. These firms were selected because of the existence of their facts data documents online. The independent variables of the study are sales growth, assets growth and cost of sales growth while the dependent variable is net assets per share.

REVIEW OF RELATED LITERATURE

2.1 Conceptual Framework

2.1.1 Sales Growth

Sales revenue is an important issue in every company in every sector of industry, because sales revenue is the main business channel through which a firm's asset and growth opportunities are converted into cash (Hand, 2005). Sales can variously be referred to as turnover, sales revenue or simply sales. Kennon (2017) states that the first line on any income statement or statement of profit or loss statement is an entry called total revenue or total sales. The figure according to him is the amount of money a business brought in during the time period covered by the income statement which does not represent the profit of the business. The total revenue figure is important because a business must bring in money to turn a profit. If a company has less revenue, all things being equal, it is going to make less profit. For start-up companies that have yet to turn a profit, revenue can sometimes serve as a gauge of potential profitability in the future.

Total sales are calculated as total number of units sold multiple by price per unit, this implies that market price and quantity are the major determinates of total sales revenue. As quantity and market price increase, total sales will also increase and vice versa. Total sales revenue is a very important metric for business owners/managers and investors alike as it provide a reasonably accurate projection of the performance of the business (Hand, 2005).

Fitzsimmons, et al. (2005) opined that many studies often use sales growth as the measure of the firm growth and asserts that a high growth rate indicates a better performance of firms. It has been argued that sales are a highly suitable indicator across different conceptualizations of the firm Davidsson and Wiklund, (2000). Mendelson(2000) and Cowling (2004) used increase in sales as the growth predictive and found that profit and sales growth are positively correlated to each other. For instance Robson and Bennett (2000) examine the growth of small and medium-sized British firms and observe a positive relationship between profitability and sales growth.

Despite this overwhelming support for sales revenue as a good variable of firm growth, some studies still argue that there is no relationship between sales revenue and growth. For instance, Heshmati (2001) observed 8000 small firms in Sweden and measured the growth in three different ways. He used number of employees, sales and the assets as the measure of the growth. The result showed non linear relationship between the two.

Aslo Kennon (2017), notes that from the perspective of an owner, there is often a mistaken belief that growing sales are always a good thing. While this is generally true, there can be exceptions. In an industry such as property and casualty insurance, growth is almost always achieved by lowering policy costs, which can hit profits hard if management isn't careful, though it may not show up for several years as there is a delay between when the policy is priced and when the losses are incurred. Growth in sales or revenue should not be the goal by itself. Growth in profitable sales and revenue, adjusted for risk, and in a way that rewards the existing owners, is the objective (Kennon, 2017).

2.1.2 Assets Growth

Bonnke (2017) defines assets as the final amount of gross investment, cash and cash equivalent, receivables and other assets as they are presented in the statement of financial position. The investors review the company's total assets before determining whether or not the business has enough existing value to make an investment. The study states that total assets as listed on a statement of financial position would include cash holdings, real estate, receivables, tangible goods, intangible goods, and any other material or investment that has value to the company. Assets include anything a company owns that has monetary value, even if it can't be readily sold. They are split into two classes, current assets, which refers to assets that a company can (or will) sell within one year, and non-current assets, which are the assets a company cannot (or doesn't plan to) sell within a year Kennon,(2017).

Most empirical studies indicate that total assets growth positively relates with firm profitability and firm value. For instance, Cooper, Gulen and Schill, (2008) compare asset growth rates with the previously documented determinants of the cross-section of returns (like book-to-market ratios, firm capitalization, lagged

returns, accruals, and other growth measures), and find that a firm's annual asset growth rate emerges as an economically and statistically significant predictor of the cross-section of U.S. stock returns. Chen, Yao and Zhang (2008), also examined the effect of corporate asset growth on stock returns using data on nine equity markets in the Pacific-Basin region (PACAP) including Japan. Result shows a pervasive asset growth effect in the PACAP markets during the sample period from 1981 to 2004. Result also indicates that there is a significantly negative relation between firms' asset growth and subsequent stock returns, suggesting potential inefficiencies of the region's financial systems in allocating capitals and valuing investment opportunities. Similarly, Maggina and Tsaklanganos (2012) examined asset growth and firm performance in Greece. Results indicate that assets growth rate is high compared to those in other prediction studies such as bankruptcy, qualified audit reports and going-concern opinions.

2.1.3 Cost of Sales Growth

Grimsley (2016) defines cost of sales or cost of goods sold (COGS) as any direct cost related to the production of goods that are sold or the cost of inventory you acquire to sell to consumers.

Business Dictionary (2017) also defines cost of sales as the sum of direct material, direct labor, and factory overheads incurred in making a product. It does not include overhead expenses related to the general operation of the business, such as rent. Cost of goods sold is reported on a company's income statement in the trading account section. Cost of goods sold is important in order to ascertain the gross profit of a manufacturing or trading firm.

For a manufacturing firm, cost of goods sold is calculated by adding the total cost of goods manufactured for the period (that is, total productivity for the period) to the opening inventory for the period and then subtracting the closing inventory. When the cost of sales is subtracted from the net sales revenue for the period, the result is the gross profit. Gross profit is one of the financial performance indicators and is also known as profit before overhead expenses (Grimsley, 2016).

2.1.4 Net Assets Per Share

Business dictionary (2016) defines net assets of a firm as total assets of the firm minus its total liabilities. This amounts to shareholders' equity and is also known as net asset value. Therefore, net assets value of a company is equal to the equity of the company or the shareholder's fund. In statement of financial position, assets are reported at historical costs. In some cases, the difference between historical cost and current market values are very high. On the contrary column, all the liabilities are reflected by the daily market value.

The origin of this discrepancy between the historic cost and current market value related to Generally Accepted Accounting Standards (GAAP) which requires that the assets, liabilities and net worth values of a company are computed on historical costs. This implies that the calculated net asset value amount will not reflect the true value of the shareholder's equity or net assets value. Thus, in order to calculate the exact value of net assets, it will be necessary to ascertain the current market value of assets of the company. This will only be necessary during merger or acquisition or upon liquidation of the firm (Farkoosh, Farkoosh and Naseri, 2012). Net Assets per share (NAPS) is obtained by dividing the net assets value of a firm by the total number of the firm's shares outstanding (O'Sullivan & Steven, 2003).

2.2 Theoretical Framework

2.2.1 Financing Constraint Growth Theory

This study is anchored on the Financing Constraint Growth Theory, because it emphasized that profitability is the driving force for firms' survival. Firms that consistently fail to make profit will not grow and will eventually die off and exit the market.

The theory was propounded by Goldratt in 1990. Goldratt argues that firms which do not make profit, does not have a buffer to invest and will not be able to finance their growth or at least their sustainability, and will finally disappear. Here, the buffer is the retained earnings, which will be small if the company does not make profit or decides to allocate all of its profit to the shareholders as dividend. This buffer equals to the internal capital, which is preferred to external capital according to the pecking order theory. Put in another way, the theory states that the companies which generate profit and then retain it, avails itself of good growth opportunities while the companies having no or low profits cannot avail good investment opportunities, so they do not grow rapidly (Jang and Park, 2011).

Audretsch and Elston (2002) is linked to this theory line of thinking when they emphasized the importance of the effect of firm size on the profitability-growth relationship. They considered firm size as a dynamometer, which measures the power of the profitability-growth relationship. According to them, a decrease in firm size weakens the impact of profitability on growth.

Also Wagenvoort (2003) states that small firms will face more financial distress, hampering the growth of these companies. Bechetti and Trovato (2002) and Carpenter and Petersen (2002) believe that the constraints mostly affect the growth of small firms. Oppositely, larger firms will face less financial constraints and are more likely being exempted to safeguard profitability. Consequently, larger firms will exploit profitability more

accurately and profoundly, leading to more investments and a quicker growth process.

2.2.2 The Classical Economic Growth Theory

This was one of the oldest firm growth theories and was developed by the Classical Economist in the late 18th and early 19th century. The proponents of this Economic School of Thought include Adam Smith, Jean-Baptiste Say, David Ricardo, Thomas Robert Malthus and John Stuart Mill. They studied firm growth with the aim of finding the optimum size of firms (Viner, 1932). Their study of firm growth led to the development of firm growth theory called the Classical Economic Theory.

This school in their study of the relationship between firm growth and firm size defined firm growth as the change between one equilibrium point and another. They concluded that firm growth shows a negative relationship between firm size and firm growth. The reason for this negative relationship is that firms search for the optimum, most efficient size. The benefits of efficiency are related to economies of scale: the larger the firm, the higher its profits.

The main implication of the classical model is that firm's growth is always limited by this optimum size. However, empirical evidence from the 1970s showed that there was a process of concentration of large firms inside some industries. Consequently, one of the main criticisms of the Classical Economists was their inability to explain the presence of large firms whose size were greater than the optimum size or how the process of firm growth evolves over time.

2.3 Empirical Review

2.3.1 Sales Growth and Firm Valuation

Fattah and Makarani (2005) examined the relationship between measures of firm size and common stocks return of companies listed in the Tehran Stock Exchange. For this purpose, a sample of 115 firms over the years 2003 to 2010 was selected for the study. In this study, production growth, sales growth and the company's net assets growth constitute measures of firm size. Using F-Limer and Hausman tests, among the common effects, fixed effects and random effects methods for model fitting and hypotheses testing, the fixed effects method was chosen. The results revealed that there is positive and significant relationship between net asset growth and sales growth with stock returns and suggests that with an increase in the sales growth rate and net assets of companies, common stock return will increase. In addition, the results showed that there is no significant relationship between production growth and stock returns.

Asimakopoulos, Samitas and Papadogonas (2009) examined firm-specifics and economy wide determinants of profitability. The study used data on 191 Greek non-financial firms listed on the Athens Stock Exchange for the periods 1995-2003. Applying panel data estimation techniques, result shows that firm profitability is positively affected by size, sales growth and investment and negatively affected by leverage and current assets. In addition, leverage, current assets, EMU participation, and the adoption of the euro were negatively related to profitability.

Becker, Kaen, Eteban and Bauman (2010) explore the effect of firm size on firm profitability in the United States of America (USA) manufacturing sector. Total assets, total sales and number of employees were used as proxies for companies' size while net profit margin was used as proxy for profitability. Data for 1987 to 2002 were collected from the USA manufacturing companies listed on the stock exchange. Simple regression analysis was used to analyze the collected data. Result reveals a negative and statistically significant relationship between the total assets, total sales, number of employees of the firms and their profitability.

Darabi, Ataei, and Abdi (2014) investigated the relationship between firm growth opportunities and changes ratio in retained earnings of companies listed in Tehran Stock Exchange. A sample of 101 companies listed in Tehran Stock Exchange during the period 2006 to 2011 was selected and secondary data collected from the firms for the study. The panel data were analyzed using SPSS 20 software, Eviews 7 and Minitab16. Results of study of test of hypothesis indicate that there is significant and inverse relationship between company's growth opportunities and changes ratio in retained earnings of companies.

Malakar and Gupta (2002) examined the determinants of share price using Indian cement Industry. Eight (8) major cement firms listed in Delhi Stock Exchange (DSE) was selected for the study. Secondary data were collected from the firm for a period of twenty years (1968-1988). Five variables were considered, namely, dividend per share, retained earnings, earnings per share, the share price, and sales proceeds. Regression analysis was used to analyze the collected data. Earnings per share were found to be a significant determinant of share value of the firms.

Gaur and Kesavan (2007) investigated the effects of firm size and sales growth rate on inventory turnover. Financial data were collected from all the 353 publicly listed U.S. retailers for the period (1985-2003). Correlation was used to analyze the data collected. With respect to size, strong evidence of diminishing returns to scale was detected. With respect to sales growth rate, inventory turnover increases with sales growth rate, but its rate of increase depends on firm size and on whether sales growth rate is positive or negative. The results are useful in (i) helping managers make aggregate-level inventory decisions by showing how inventory turnover

changes with size and sales growth, (ii) employing inventory turnover in performance analysis, benchmarking and working capital management, and (iii) identifying the causes of performance differences among firms and over time.

2.3.2 Assets Growth and Firm Valuation

Maggina and Tsaklanganos (2012) examined asset growth and firm performance in Greece.

A sample of 265 firms listed on Athens Stock Exchange (ASE) was selected for the study. The sample size was based on the number of firms that appeared on the Internet in 2009. Only firms that had data for the year 2008 were selected to facilitate computation of asset growth. Of the 265 firms in the sample, 106 firms had positive asset growth, 159 had negative asset growth. Discriminate analysis and Logit models were employed to analyze the collected data. Results indicate that assets growth is predictable at an 85.7% rate in large companies. This rate is high compared to those in other prediction studies such as bankruptcy, qualified audit reports and going-concern opinions.

Chen, Yao and Zhang (2008) examined the effect of corporate asset growth on stock returns using data on nine equity markets in the Pacific-Basin region (PACAP) including Japan (a well-developed economy), China (one of the most rapid growing economies), as well as Hong Kong, Taiwan, Korea, Malaysia, Singapore, Thailand, and Indonesia. Data were collected from two sources, stock return and accounting data from the Pacific Basin Capital Market Research (PACAP) databases (available via Wharton Research Data Services). The Japanese market has the longest sample period from 1981 to 2004 while the Indonesian stock market has the shortest period from 1990 to 1998. Fama–French (1993) three-factor model was adopted to compute alphas for decile portfolios. Fama–MacBeth regression was also used to jointly examine the impacts of alternative factors on asset growth effects. Result shows a pervasive asset growth effect in the PACAP markets during the sample period from 1981 to 2004. That is, there is a significantly negative relation between firms' asset growth and subsequent stock returns, suggesting potential inefficiencies of the region's financial systems in allocating capitals and valuing investment opportunities.

Asgari, Pour, Zadeh and Pahlavan (2015) investigate the relationship between firm growth opportunities and firm size on changes ratio in retained earnings of listed companies in Tehran Stock Exchange. Financial data were collected from 101 companies listed in Tehran Stock Exchange during the period 2006 to 2011. To analyze the data, software SPSS20, Eviews7 and Minitab16 were used. Result shows that there is an inverse and significant relationship between company's growth opportunities and changes ratio in retained earnings ratio of companies. Result also confirmation that there is a direct and significant relationship between firm size and with changes ratio in retained earnings of companies.

Alghusin (2015) investigated the impact of financial leverage, company's growth, non-current/ total assets ratio and firm's size as independent variables on profitability in proxy of return on assets ratio (ROA) as dependent variable. A sample of 25 Jordanian industrial companies listed on Amman Stock Exchange (ASE) for a period of 10 years (from 1995-2005) was selected.

The data collected from the companies were analyzed using descriptive statistic and regression analysis. The results of the research show that there is a significant effect of the financial leverage and growth on profitability of industrial companies. Therefore, industrial companies may enhance the profitability of their firms by minimizing the debt, and increasing financial assets compared with total assets. So, the study concludes that they are beneficial to the stakeholders.

Michael, Gulen and Schill (2008) conducted a study to examine asset growth and the cross-section of stock returns. The study used all NYSE, Amex, and NASDAQ non financial firms (excluding firms with four-digit SIC codes between 6000 and 6999) listed on the CRSP monthly stock return files and the Compustat annual industrial files from 1963 through 2003. To mitigate backfilling biases, a firm must be listed on Compustat for 2 years before it is included in the data set (Fama and French, 1993). Time series analysis was used to analyze the data collected for the study. Firm-level asset investment effect in returns was analyzed by examining the cross-sectional relation between firm asset growth and subsequent stock returns. When we compare asset growth rates with the previously documented determinants of the cross-section of returns (i.e., book-to-market ratios, firm capitalization lagged returns, accruals and the growth measures). Result shows that a firm's annual asset growth rate emerges as an economically and statistically significant predictor of the cross-section of U.S. stock returns

2.3.3 Cost of Sales Growth on Firm Valuation

Shardeo (2015) evaluates the impact of inventory management on the financial performance of firm in India. Three major steel manufacturing companies of India were selected for this study. These companies are SAIL, TATA Steel and JSW Steel. Secondary data were collected from the selected companies. Pearson correlation coefficient was used to correlate inventory turnover of the firms with the firms' profitability. This is to show the impact of inventory management on the profitability of the firms. Result shows that inventory turnover ratio is correlated with the net profit of the companies. Result further shows that inventory is the most important part of any business especially for manufacturing companies. It is hidden costs which are to be controlled for sustaining in present competitive market. The study recommends that some appropriate inventory control technique should

be installed to increase the inventory turnover ratio, asset turnover ratio, return on assets. There after that the firm's profitability will surely improve.

Folinas and Shen (2014), explores the effects of Inventory Turnover and Inventory Days on firm performance in the United Kingdom Agricultural Machinery Industry. A sample of 55 Agricultural machinery industry firms were selected and used for the study after pruning the sample size down from the 816 firm originally selected. This was to obtain an increased accuracy of data average. Data were collected from the selected firms for seven years, that is, from 2002 to 2008. Specific performance measures such as Earnings before Interest and Tax to Sales Ratio, Gross Profit to Sales Ratio, and Return on Assets are examined by conducting statistical analyses to determine the correlations between inventory and financial performance in agricultural machinery industry. Result shows that the analysis of inventory turnover with financial performance measures doesn't indicate any links between these variables. Furthermore, based on the results, inventory days play a role in the financial performance of organizations however to varying degrees.

METHODOLOGY

3.1 Research Design

This study adopted *ex-post facto* researcher design, because historical data were collected from the published annual accounts of the selected manufacturing firms in Nigeria for the study.

3.2 Area of Study

This study was conducted in Nigeria and focused on the manufacturing firms quoted in the Nigeria Stock Exchange (NSE) in 2017.

3.3 Sources of Data

Secondary data made up of total sales revenue, total assets, cost of sales and net assets per share collected from the published annual accounts of the selected manufacturing firms in Nigeria were used for the study.

3.4 Population

Thirty eight (38) manufacturing firms quoted on the Nigeria Stock Exchange as at October 2017 constituted the population of this study.

3.5 Sample Size Determination

Out of the thirty eight (38) manufacturing firms listed on the NSE, five (5) were purposively selected for the study. Four (4) firms were selected from the consumer goods manufacturing sub-sector with a population of twenty two (22) firms while one (1) was selected from the industrial goods sub-sector with a population of sixteen (16) firms. This is to ensure proportional representation of each sub-sector in the sample.

3.6 Model Specification

The following model was developed based on the variables used in the study:

$$\text{NAPS} = \beta_0 + \beta_1 \text{SG} + \beta_2 \text{AG} + \beta_3 \text{COSG} + \varepsilon$$

Where:

f = Function of

NAPS = Net Assets Per Share

SG = Sales Growth

AG = Assets Growth

COSG = Cost of Sales Growth

β = Beta

ε = error margin

3.7 Description of Variables in the Model

Net Assets Per Share (NAPS): Net assets per share of a firm are total assets of the firm minus its total liabilities. It is calculated as net assets divided by the total number of shares outstanding.

Sales Growth (SG): Sales growth is the increase in value of total sales (total revenue) in the current year over the previous year. Total sales of a firm are the total amount the firm realizes within a period from the sale of its products or services. It is calculated as total number of units sold times price per unit.

Assets Growth (AG): Assets growth is the increase in value of total assets in the current years over the previous year. Total assets of a firm refers to the combined amount of a company's non current asset and current assets as recorded in a company's statement of financial position.

Cost of Sales Growth (COSG): Cost of sales growth is the increase in value of the current year cost of sales over the prior year cost of sales. Cost of sales or cost of goods sold is the sum of direct cost related to the

production of goods that are sold or the cost of inventory you acquire to sell to consumers.

3.8 Method of Data Analysis

Simple and multiple regression analysis were used to test the formulated hypotheses for the study. Sales growth, assets growth and cost of sales growth are the independent variables and proxy for firm growth indices while net asset per share is the dependent variable and proxy for firm valuation.

DATA PRESENTATION AND ANALYSIS

4.1 Data Presentation

The data collected from the published annual accounts of the selected manufacturing firms in Nigeria are presented in tables 4.1.1 to 4.1.5.

4.2 Data Analysis

The data collected for this study were analyzed using multiple regression analysis and the results presented in tables 4.2.

Table 4.2.1 Regression Coefficients (a)

Model	Unstandardized Coefficients		Standardized Coefficients		T	Sig.
	B	Std. Error	Beta			
1 (Constant)	1.255	.166			1.701	.032
COSG	.310	.384	.058		.550	.460
SG	1.025	.205	.075		1.329	.000
AG	.690	.378	.152		.860	.008

a Dependent Variable: NAPS

Source: SPSS Output

4.3 Test of Hypotheses

Table 4.2.1 presents the result of regression analysis which was used to test the hypotheses formulated for the study. If the coefficients are replaced in the equation, the model can be defined as: $NAPS = 1.025SG + 0.690AG + 0.310COSG + \epsilon$

Decision rule:

Level of significance (α) = 0.05

Reject the null hypothesis if the significant value in the regression coefficients is less than the level of significance (0.05), otherwise accept the null hypothesis. Based on this decision rule, the findings from the test of hypotheses are hereby presented below:

Test of Hypothesis One: Sales growth does not significantly affect net assets per share of manufacturing firms in Nigeria.

Finding: From table 4.2.1, the significant value of sales growth in the multiple regressions co-efficient is significant at 5% level of significance. Based on this, **we reject** the null hypothesis which states that Sales growth does not significantly affect net assets per share of manufacturing firms in Nigeria.

Test of Hypothesis Two: Assets growth does not significantly affect net assets per share of manufacturing firms in Nigeria.

Finding: From table 4.2.1, the significant value of assets growth in the multiple regression coefficients is significant at 5% level of significance. Based on this, **we reject** the null hypothesis which states that assets growth does not significantly affect net assets of manufacturing firms in Nigeria.

Test of Hypothesis Three: Cost of sales growth does not significantly affect net assets per share of manufacturing firms in Nigeria.

Finding: From table 4.2.1, the significant value of cost of sales growth in the multiple regression coefficients is not significant at 5% level of significance. Based on this, **we accept** the null hypothesis which states that assets growth does not significantly affect net assets of manufacturing firms in Nigeria.

5.1 Summary of Findings

In the light of the data analysis, findings and discussions, we hereby summarize the findings of this study thus:

- i. That sales growth of manufacturing firms in Nigeria positively and strongly affects net assets per share of the firms for the period studied.
- ii. That assets growth of manufacturing firms in Nigeria positively and strongly affects net assets per share of the firms for the period studied.
- iii. That cost of sales growth of manufacturing firms in Nigeria positively, but weakly affects net assets per share of the firms for the period studied.

5.2 Conclusion

Based on the findings of this study, the discussions and the summary of findings, we hereby conclude that sales growth and assets growth of manufacturing firms in Nigeria positively and strongly affect net assets per share of the firms during the period studied. This study hereby also conclude that cost of sales growth of manufacturing firms in Nigeria positively and insignificantly affects net assets per share of the manufacturing firms during the period.

5.3 Recommendations

In view of the findings, discussions and conclusion of this study, we hereby recommends thus:

- i. That manufacturing firms in Nigeria should increase their sales in order to improve their net assets per share and hence their firm value. A firm can increase its sales per implementing some sales promotion measures such as advertisement, personal selling and publicity.
- ii. Secondary, that Nigeria manufacturing firm managers can improve their firm net asset per share by increasing its total assets. This is because assets growth positively and strongly affects net assets per share and firm value of the manufacturing firms. A total asset is the addition of, current assets, non-current assets and intangible assets. Firm managers can increase total assets by increasing its non-current assets that will generate future benefits to the firms.
- iii. Lastly, the manufacturing firms in Nigeria should improve their firm value by increasing its productivity. Increase in productivity is depicted by an increase in cost of sales of the firms, which is in turn depicted by increase in volume of out-put or level of activities in the organization.

REFERENCES

- Alghusain N.A.S (2015). Do financial leverage, growth and size affect profitability of Jordanian Industrial Firms Listed? *International Journal of Academic Research in Business and Social Sciences*; 5(4), 385-398, ISSN: 2222-6990.
- Aslam, A Ghaffar, A Talha, T & Mushtaq H (2015). Impact of compensation and reward system on the performance of an organization: An empirical study on Banking sector of Pakistan. *European Journal of Business and Social Sciences*; 4(8), 319-325, ISSN: 2235 -767X
- Asimakopoulous, I., Samitas, A. & Papadogonas, T. (2009), "Firm-specific and economy wide determinants of firm profitability: Greek evidence using panel data", *Managerial Finance*; 35 (11): 930-9.
- Asgari M.A, Pour A.A, Zadeh R.A & Pahlavan S (2015). The relationship between firm's growth opportunities and firm size on changes ratio in retained earnings of listed companies in Tehran Stock Exchange. *International Journal of Innovation and Applied Studies*; 3(10), 923-931.
- Audretsch, D. B., Coad, A., & Segarra, A (2014). Firm Growth and Innovation: *Small Business Economics*; 43(4), 743 – 749.
- Audretsch D.B. & Elston J.A. (2002) Does firm size matter? Evidence on the impact of liquidity constraints on firm investment behavior in Germany, *International Journal of Industrial Organization*; 20 (1), 1-17.
- Becchetti L. & Trovato G. (2002). The determinants of growth for small and medium sized firms: the role of the availability of external finance, *Small Business Economics*, 19 (4), 291-306.
- Becker-Blease, J. R., Kaen, T. K, Eteban, A. & Bauman, H. (2010). Employees, firm size and profitability in U.S manufacturing industries. *Investment Management and Finance Innovation Journal*, 7(2), 7-23.
- Bonnie R (2017). What is total assets. <http://www.businessdictionary.com/definition/total-assets.html>
- Business Dictionary (2016). Assets Valuation Methods, <http://www.businessdictionary.com/search.php?q=ASSETS+VALUATION+METHODS&cx=002109824679542468969%3Antvpz2hrzm0&cof=FORID%3A9&ie=UTF-8>
- Carpenter, R.E. & Petersen, B.C. (2002). "Is the growth of small firms constrained by internal finance?" *Review of Economics and Statistics*; 82(2), 298-309.
- Chen S. Y, Yao T, & Zhang T (2008). The effect of Asset Growth and Stock Returns in the Pacific-Basin Markets. *Publication of College of Business Administration, University of Rhode Island and Eller College of Management, University of Arizona*.
- Cooper M. J, Gulen H & Schill, M J (2008). Assets growth and the cross-section of stock returns. *The Journal of Finance*; 63(4) 1609 – 1651.
- Cowling, M (2004). The growth – profit nexus. *Small Business Economics*; 24(1), 1 – 9.
- Darabi R, Ataei Z & Abdi H (2014). The relationship between firms growth opportunities and changes ratio in retained earnings in listed companies in Tehran Stock Exchange. *Indian Journal of Fundamental and Applied Life Sciences* 4 (1), 1536-1544.
- Delmar, F., Davidsson, P. & Gartner, W. (2003). Arriving at the high growth firm. *Journal of Business Venturing* 2(18),189-216.
- Davidsson, P., & Wiklund, J. (2000). Conceptual and empirical challenges in the study of firm growth; In D.

- Sexton and H. Landstrom (Eds.), *The Blackwell Handbook of Entrepreneurship*, 26-44. Oxford, MA: Blackwell.
- Fattah M. & Makarani K.F (2005). Investigating the effect of firm size (production, sales and net assets) on stock returns: Evidence from Tehran Stock Exchange. *World of Sciences Journal*, 1(6), 163-171.
- Farkoosh D, Farkoosh B.D, & Naseri J (2012). The effect net assets value in purchasing the shares of investment companies. *Journal of Humanities and Social Science*, 5(2). 17-20
- Fitzsimmons, J.R., Steffens, P.R., & Douglas E.J. (2005). Growth and profitability in small and medium sized Australian Firms. *AGSE Entrepreneurship Exchange, Melbourne*.
- Folinas, D & Shen, C (2014). Exploring links among inventory and financial performance in the agricultural machinery industry. *International Journal of Food and Agricultural Economics*; 2(4), 1 – 12.
- Hand, J. R. M. (2005). What drives the top line? Non financial determinants of sales revenue in private Venture-Backed Firms.
- Heshmati & Almas (2001). On the growth of micro and small firms: Evidence from Sweden. *Small Business Economics*, 17, 213-228.
- Gaur, V. & Kesavan, S. (2007). The effects of firm size and sales growth rate on Inventory Turnover Performance in the U.S. Retail Sector. *Research Paper presented to Johnson Graduate School of Management, Cornell University, Sage Hall, Ithaca, NY 1485*.
- Goldratt E.M. (1990). What is this thing called the theory of constraints? *North River Press, Croton-on-Hudson, NY*.
- Grimsley S. (2016). Cost of goods sold on an income statement: Definition and Formula. <http://study.com/academy/lesson/cost-of-goods-sold-on-an-income-statement-definition-formula-quiz.html>
- Jang, S. & Park, K (2011). Inter-relationship between firm growth and profitability. *International Journal Hospitality and Management*, 30(1), 1027–1035.
- Javed F & Shah F.M (2015). Impact of retained earnings on stock returns of food and personal care good industry listed in Karachi Stock Exchange. *International Journal of Scientific and Research Publications*, 11(5), 397-407, 2250-3153.
- Kennon J (2017). Total sales revenue <https://www.thebalance.com/total-revenue-or-total-sales-357593>
- Kim, W (2008). Strategic Management Dynamics. London; John Wiley & Sons Ltd.
- Kouser, R., Bano T., Azeem M. & Hassan M, (2012). Inter-relationship between profitability, growth and size: A case of non-financial companies from Pakistan. *Pakistan Journal of Commerce & Social Sciences*, 6(2): 405-419.
- Maggina A, & Tsaklanganos A (2012). Asset growth and firm performance: Evidence From Greece. *The International Journal of Business and Finance Research* 2(6).
- Mendelson, H. (2000). Organizational architecture and success in the information technology industry. *Management Science*, 46, 513–529.
- Michael J, Gulen C.H & Schill M. J (2008). Assets growth and the cross-section of stock returns. *The Journal of Finance*, 63(4), 1609-1651.
- Malakar B. & Gupta R. (2002), “Determinants of share price – A system approach: The Modified Model”. *Finance India*, 16(4), 1409-1418.
- Mercedes T.C (2007) Firm growth, persistence and multiplicity of equilibria: An analysis of Spanish Manufacturing and Service Industries, 978-84-690-7585-8 / dl: t.1390-2007.
- Odden, P. & Kelley, D.C., (2002). Do goals mediate the effects of incentives on performance? *Academy of Management Review*.
- O’Sullivan, A & Steven, M S (2003). Macroeconomics: Principles and Tools. Prentice Hall, New Delhi, India.
- Ozgulbas, N., Koyuncugil, A. S., & Yilmaz, F. (2006). Identifying the effect of firm size on financial performance of SMEs. *The Business Review, Cambridge*, 1(6), 162–167.
- Ramezani, C. A., Soenen, & Jung, A. (2002). "Growth, corporate profitability, and value creation", *Financial Analysts Journal*, 6(1). 56 - 67.
- Robson, P., & R. Bennett (2000): SME growth: The relationship with business advice and external collaboration," *Small Business Economics*, 3(15), 193 - 208.
- Shardeo, V (2015). Impact of inventory management on the financial performance of the firm. *Journal of Business and Management*; 17(4), 1
- Sumangala P.B (2012). Impact of earnings per share on market value of an equity share: An empirical study in Indian Capital Market. *Journal of Finance, Accounting and Management*, 3(2), 1-14.
- Ungere, M., Gerber, C., & Volschenk, S (2015). Managing firm growth: Lessons of success. *African Journal of Management*; 9(7), 354 -368.
- Wagenvoort R. (2003) Are finance constraints hindering the growth of SMEs in Europe? *EIB 7, Economic and Financial Studies, European Investment Bank*.