Financial Ratio Analysis as a Determinant of Profitability in Nigerian Pharmaceutical Industry

Mr. Siddharth S Kanungo
Assistant Professor,
Department of Finance
IIPM,Kansbahal, Odisha

Abstract

Financial ratio analysis is a vital one since the profitability of an enterprise is directly affected by such decision. The successful selection and use of appropriate financial ratio is one of the key elements of the firm's financial strategy. Hence, proper care and attention need to be given while such decision is taken. The purpose of this study is to examine the relationship between the financial ratio analysis and profitability of the Nigerian Pharmaceutical industry over the past eleven (11) years period from 2001 – 2011. These financial ratio analyse have immense potentials to help organizations in improving their revenue generation ability as well as minimization of costs. The researcher used five (5) variables for the analyses such as: Inventory turnover ratio (ITR); Debtors' turnover ratio (DTR); Creditors' velocity (CRSV); Total assets turnover ratio (TATR) and Gross profit margin (GPM). Profitability as a dependent variable is represented by Gross profit margin (GPM) while financial ratio analysis stands as ITR, DTR, CRSV and TATR for independent variables. Secondary data were obtained from the financial statements (Balance sheet and Profit and Loss account) of the selected quoted pharmaceutical companies' financial statement. The data have been analyzed using descriptive research method and multiple regressions to find out the relationship between the variables. The results of the analysis showed that there is a negative relationship between all independent variables with profitability in the Nigerian pharmaceutical industry. It also revealed that debtors' turnover ratio, creditors' velocity and total assets turnover ratio have no significant relationship on the profitability of the company while only inventory turnover ratio shows a significant relationship with profitability. The results further suggested that only 17.8% of the independent variables are determinant factors of profitability in the enterprises sampled while 82.2% of the major factors are determine from other factors outside the independent variables. Based on the above premises, the researcher recommended that the inventories of the company should be checked and monitored more frequently by management to prevent out of stock syndrome or over stocking of their products. It is also recommended that creditors' velocity should be at a point where the creditors and purchases are equal in order to take the advantage of credit facility and any discount associated with prompt payment for goods to increase the profitability of the company. The management should utilize its assets efficient in generating more income for the company.

Keywords: profitability, determinants, pharmaceutical industry, financial analysis, descriptive research, ratio, multiple regressions, inventory turnover ratio, debtors' turnover ratio, creditors' velocity, total assets turnover ratio and gross profit margin

1. Introduction

Every firm is most concerned with its profitability. One of the most frequently used tools of financial ratio analysis is profitability ratio which is used to determine the company's bottom line. Profitability measures are important to company managers and owner alike. If a small business has outside investors who have put their

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own money into the company, the primary owner certainly has to show profitability to those equity investors. Profitability ratios show a company's overall efficiency and performance. Many researchers have studied the determinant of profitability in many ways. But none of them had studied on the determinant of profitability using financial ratio analysis. Because of this, researcher chose this research work to show how the financial ratio analysis can be used in determination of profitability in pharmaceutical industry. Nweze (2011) defines ratio analysis as financial statement analysis uses as a primary tool, ratios, which relate two figures applicable to different categories. Okwuosa (2005) sees ratio analysis is one number expressed in terms of another to show the relationship between them. He adds that in financial accounting and reporting, it is generally agreed that there are certain relationships between items shown in the profit and loss account and those in the balance sheet as well as between items in these statements. So ratios are used as a means of expressing these relationships. Ezeamama (2010) argues that ratios are most effectively used in interpretation of financial statement when compared to a standard or norm. A single ratio in itself does not indicate favourable or unfavourable condition. It has to be compared with a benchmark or standard before commenting on the ratio. Thukaram Rao (2009) states that ratio analysis is the process of determining and interpreting numerical relationship based on financial statements. It helps to summarise the large quantities of financial data and to make qualitative judgement about the firm's financial performance. Osisioma (1996) says that analysis is the resolutions or separation of data into their elements or component parts, the tracing of facts to their source with a view to discovering the general principles underlying to individual phenomena. He continues that the analysis of financial accounts is therefore, the interpretation, amplification and translation of facts and data contained in the financial statements, the purpose being the drawing of relevant conclusions therefore, making inferences as to business operations, financial position and future prospects. Chandra (2008) adds that financial ratio analysis is a study of ratios between various items or groups of items in financial statement. Pandey (2010) sees financial analysis as a process of identifying the financial strengths and weaknesses of the firm by properly establishing relationships between the firm by properly establishing relationships between the items of the balance sheet and the profit and loss account. He adds that ratio analysis is a powerful tool of financial analysis. A ratio is used as a benchmark for evaluating the financial position and performance of a firm. So the relationship between two accounting figures, expressed mathematically, is known as a financial ratio (or simply as a ratio).

2. Objective of the Study

The main objective of the study is to determine whether financial ratio analysis have any effect on the profitability of the companies with particular reference to some quoted pharmaceutical companies in Nigeria.

The specific objectives of this study are:

- To examine the relationship between inventory turnover ratio (ITR) on Gross Profit Margin (GPM) of pharmaceutical companies in Nigeria.
- To establish if there is a relationship between debtors' turnover ratio (DTR) on Gross Profit Margin (GPM) of pharmaceutical companies in Nigeria.
- To know the extent of relationship between Creditors' Velocity (CRSV) and Gross Profit Margin (GPM) in pharmaceutical companies in Nigeria.
- To determine whether Total Assets turnover ratio (TATR) have any relationship on Gross Profit Margin (GPM) in pharmaceutical companies in Nigeria.

3. Statement of Hypotheses

Based on the research questions, the following hypotheses were developed:

H1: Inventory turnover ratio (ITR) has no significant relationship on Gross Profit Margin (GPM) of pharmaceutical companies in Nigeria.

H2: There is no significant relationship between debtors' turnover ratio (DTR) and Gross Profit Margin (GPM) of pharmaceutical companies in Nigeria.

H3: Creditors' Velocity (CRSV) has no significant relationship on Gross Profit Margin (GPM) of pharmaceutical companies in Nigeria.

H4: There is no significant relationship between total assets turnover ratio (TATR) and Gross Profit Margin (GPM) of pharmaceutical companies in Nigeria.

4. Conceptual Framework

Profitability means ability to make profit from all the business activities of an organization, Company, firm or an

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enterprise. It shows how efficiently the management can make profit by using all the resources available in the market. Profitability is also the ability of a given investment to earn a return from its use. However, the term "profitability is not synonymous to the term "efficiency". Profitability is an index of efficiency; and is regarded as a measure of efficiency and management guide to greater efficiency. Though, profitability is an important yard stick for measuring the efficiency, the extent of profitability cannot be taken as a final proof of efficiency. Sometimes satisfactory profits can mark inefficiency and conversely a proper degree of efficiency can be accompanied by an absence of profit. The net profit figure simply reveals a satisfactory balance between the values receive and value given. The change in operational efficiency is merely one of the factors on which profitability of an enterprise largely depend. Moreover there are many other factors besides efficiency, which affect the profitability. Sometimes, the terms "Profit" and "Profitability" are used interchangeably. But in real sense, there is a difference between the two. Profit is an absolute term, whereas, the profitability is a relative concept. However, they are closely related and mutually interdependent, having distinct roles in business. Profit refers to the total income earned by the enterprise during the specified period of time while profitability refers to the operating efficiency of the enterprise. It is the ability of enterprise to get sufficient return on the capital and employees used in the business operation.

5. Financial Ratio Analysis Techniques in Organisation

5.1 Inventory Turnover Ratio (ITR)

Nweze (2011) says that inventory turnover is computed by dividing the cost of goods sold by the average inventory. An average inventory is determined by adding the beginning and ending inventories and dividing by two. The decline in the inventory turnover indicates the stocking of more goods. An attempt should be made to determine whether specific inventory categories are not selling well and the reason for this. Emekekwue (2005) argues that stock turnover ratio seeks to identify the length of time that stock is held as inventory before it is converted to cash. In organizations where stocks are perishable, holding of large stock is very costly to the business. However, if stock is not the perishable type, delays in disposing stock might be profitable during inflationary period. It must be appreciated that sales will be valued at cost; this is because the stock will be valued at cost. If the sales were not valued at cost, then we shall be over stating the ratio. Moreover, one will be comparing two incomparable i.e. the sales figures and the cost of stock. Furthermore, the inventory turnover ratios measures the average number of days for which stock is held. It helps to assess the efficiency of stock utilization. Various factors affect the stock level help by the organization such as product, production-seasonal or otherwise, demand pattern, competition, funds availability etc.

5.2 Debtors' Turnover Ratio (DTR)

Leahy (2012) sees debtors' turnover ratio as accounts receivable variable that measures the impact of a company's credit function on profitability. This impact includes the risk associated with extending credit. He adds that the higher the ratio of accounts receivable to sales, the greater the manufacturer's profitability. Otherwise, there would be no reason for the company to provide this function. Nweze (2011) argues that debtor's ratio consist of debtors turnover and the collection period. The debtor's turnover gives the number of times debts are collected during the years. The turnover is found by dividing net credit sales (if not available, then total sales) by the average debtors. Average debtors are found by adding the beginning debtors to the ending debtors and dividing by two. The higher the debtor's turnover, the better, since this means that the company is collecting quickly from customers. These funds can then be invested for a return. The drop in the debtor's turnover ratio is significant, indicating a serious problem in collecting from customers. Therefore, a careful analysis of the company's credit policy is required. The average collection period, or the number of days sales remain with debtors is found by dividing the debtor's turnover into 365 days. The higher collection period indicates a danger that customers' balances may become uncollectible. Perhaps the company selling to highly marginal customers - a customer whose credit worthiness is very much in doubt. Chandra (2008) says that debtors' turnover ratio shows how many times sundry debtors (accounts receivable) turnover during the year.

5.3 Creditors Velocity (CRSV)

Okwuosa (2005) says that creditors' velocity means creditors' turnover. This indicates the average number of times creditors' turnover is paid within a year. High creditors' turnover ratio indicates that the company is not taking advantage of credit facility and this may result in loss of profit as a result of interest on borrowed funds or bank overdraft needed to meet up. On the other hand low creditors' turnover ratio indicates that the company is not taking advantage of any discount associated with prompt payment and this may lead to increase in their cost of sales and consequently decrease in their profit. Therefore, a company should ensure that its creditors' turnover ratio is neither too high nor too low. The creditors' turnover is calculated by dividing Credit purchases by

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Average creditors. Leahy (2012) argues that creditors' velocity is designed to capture the effect of borrowing on the profitability of a company. It also measures the manufacturer's ability to negotiate the term of purchases. The impact of this variable on profitability depends upon how the business in financed. If the manufacturer has to borrow to make up for accounts payable, then the higher the ratio of accounts payable to cost of goods sold, the lower the expected profitability. If, on the other hand, the business is financed through retained earnings, then the higher the ratio of accounts payable to cost of goods sold, the higher the expected profitability if the cost of using retained earnings is less than the cost of borrowing. We cannot tell in advance which of these forces is more important.

5.4 Total Assets Turnover Ratio (TATR)

Ezeamama (2010) defines total assets turnover as ratio that expresses the number of times the value of assets utilized by the firm has been generated into sales. According to Pandey (2010) total assets' turnover ratio shows the firm's ability in generating sales from all financial resources committed to total assets. Nweze (2011) says total assets turnover measures the level of capital investment relative to sales volume. It tells the firm how well it manages its overall assets.

5.5 Gross Profit Margin (GPM)

Osisioma (1996) sees gross profit margin as a measure of the efficiency of a firm's sales operations with respect to the cost of goods sold. By using the gross profit figure, it avoids the distortion that may be caused by non-operating cost and revenue, and thus, limits itself to an evaluation of the trading and manufacturing operations. This ratio is based on the firm's net sales, because a firm's sales are its most important feature. Sales make profit- without sales there can be no profit. A low gross profit margin is an indication that cost of goods is relatively too high.

6. Theoretical Framework

Dave (2012) studies capital structure and profitability of the firms listed on Nigerian stock Exchange. They observed negative association between long term debt and profitability and suggested that top management should take interest in capital structure to improve profitability. He adds that the relationship between working capital management and profitability of 131 companies listed in the Athens Stock Exchange for the period shows that account receivables, inventories and account payables had negative relationship with profitability. However, the relationship of accounts receivables and account payables with the profitability was highly significant, while the relationship of inventory with profitability was not statistically significant suggesting that account receivable and account payables are the areas to be focused to improve the profitability of the firm.

Chin (1997) adds that the relationship between the profitability of a company with various capital structure variables i.e. cash and marketable securities, receivables, working capital, long term investment, debt and equity capital etc. Lazaridis and Tryfonidis (2006) argue that the relationship between working capital management and profitability of 131 companies listed in the Athens stock Exchange for the period 2001- 2004. They observed that account receivables, inventories and account payables had negative relationship with profitability. Kieu (2001) focuses on working capital management and tools of financial management such as ratio analysis, profitability measures and break- even analysis. Leahy (2012) examines the determinants of profitability for a segment of the U.S. pharmaceutical industry. He tested the proposition that profitability is related to functions performed and risks assumed by a company. As in those studies, the results vary according to the measure of profitability employed, i.e, the significance of the independent variables may depend on the profitability measure employed. The obvious who found that the results did not vary systematically according to estimation method and suggests that the results vary with the industry examined. Niresh (2012) says that capital structure decision of a bank is similar to that of a non-financial firm. Although there are considerable inter industry differences in the capital structure of firms due to the unique nature of each industry business, the intra-firm variations are attributed to the business and financial risk of individual firms. Most studies found a negative relationship between profitability and leverage. Chary, Kasturi and Kumar (2011) argue that the relationship between working capital and the profitability has been an interesting debate in financial analysis. Working capital decision affects both liquidity and profitability excess of investment in working capital may result in poor liquidity. He adds that management need to trade-off between liquidity and profitability to maximize shareholders wealth. To understand the impact of working capital on profitability, one needs to establish the relationship between these two statistical measures such as correlation and regression models can be used to understand such relationship. Because of this literature review above, the researcher concludes that they are significantly effects between the independent variables and dependent variable of this study. The financial ratio analysis will also help in planning, acquisition, allocation and control of financial resources of an organization in order to achieve the goal(s) of the organization with

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minimum financial discomfort, and maximum benefit which is profit maximization. Moreover, if the management manage their finance very well, it will increase the profit made by the organization while if not, the profit of the organization will be affected or decreased. In other words, inventory turnover ratio and debtors, turnover ratio are to be maintained at higher levels for better profitability, Creditors may be kept at higher levels for shortening the length of net trade cycle. Furthermore, this inverse relationship between net trade cycle and return on assets was found different across industries depending on the type of industry. Finally, the relationship between variables such as those between working capital management and profitability i.e. if efficient working capital management increases profitability, one should expect a negative relationship between the measure of working capital management and profitability variable. There is a negative relationship between gross profitability on the hand and the measure of working capital management on the other hand. This is consistent with the view that the time lag between expenditure for purchases of raw materials and the collection of sales of finished goods can be too long, and that decreasing this time lag increases profitability.

7. Methodology

Since the purpose of this research is to gain a better insight into the profitability of pharmaceutical industry and the effects of various independent variables on the dependent variables. A descriptive research was adopted to obtain necessary data for the study. In this study profitability proxy by Gross profit margin (GPM) is our dependent variable which Financial ratio analysis measured by ITR, DTR, CRSV and TATR are our independent variables. GPM is a measure of the overall effectiveness of the firm in generating profit with available assets (Van-Horne and Wachowicz, 2005).

7.1 Method of Data Collection

In conducting this research paper, the available data on the study are secondary source of data. The population of pharmaceutical quoted companies in Nigeria Stock Exchange (NSE) at end of June, 2012 was six (6).

They are as follows:

1) Evans Medical PLC
2) Fidson Healthcare PLC
3) Glaxo Smithkline Consumer Nigeria PLC
4) May & Baker Nigeria PLC
5) Neimeth International Pharmaceuticals PLC
6) Pharma- Deko PLC

Because of non- available of data from Onitsha Nigeria Stock Exchange, the researcher decide to use five (5) companies: Evans Medical PLC, Glaxo Smithkline Consumer Nigeria PLC, May & Baker Nigeria PLC, Neimeth International Pharmaceutical PLC and Pharma-Deko PLC. The data used for the analysis were extracted from the annual reports and financial statement of the five (5) selected pharmaceutical companies for the research paper for eleven (11) years from year 2001-2011. The data extracted from this publication related to the pharmaceutical companies of ITR, DTR, CRSV, TATR, and GPM all on yearly basis.

7.2 Method of Data Analysis

7.2.1 Descriptive Analysis

Descriptive analysis is the first step of this analysis, it will help researchers to describe relevant aspects of financial management (both mobilization of funds and deployment of funds) and provide detailed information about each relevant variable. Researchers have already been conducted in our area of study and a lot of information is already on hand and SPSS Software has been used for analysis of the different variables in this study.

7.2.2 Quantitative Analysis

In quantitative analysis researcher applied two methods. First: We used correlation models, specifically Pearson correlation to measure the degree of association between different variables under consideration. Second: researchers used regression analysis to examine the relationship of independent variables with dependent variable and to know the effect of independent variables on the dependent variable. By using this method, researchers will be able to identify the significant of each explanatory variable to the model and also the significance of the overall model. The model was used as simple regression (one independent variable) and multiple regressions (more independent variables).

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The researcher has used Ordinary Least Squares (OLS) method for analysis of hypotheses stated in a multiple form. For this purpose of analysis the MS Excel Software was used to analyse financial data and SPSS Software used to run the regression and ANOVA.

We can see all the variables chosen and their method used for calculation as given in the following table. So the variables that have been used are:

No.	Variables	Method used for Calculation
1).	Gross Profit Margin (GPM)	Gross Profit /Sales
2).	Inventory turnover ratio (ITR)	Inventory /Sales
3).	Debtors' turnover ratio (ITR)	Trade debtors/Sales
4).	Creditors' Velocity (CRSV)	Trade creditors/Cost of sales
5).	Total Assets turnover ratio (TATR)	Total Assets/Sales

7.3 Model Specifications

This choice of OLS (Ordinary Least Squares) for this paper is guided by the fact that its computational procedure is simple and the estimates obtained from this procedure has optimal properties which includes linearity, Unbiasedness, Minivariance and mean squared error estimation (Koutsoyianis, 2003).

In carrying out this paper work on financial management as a determinant of profitability, we develop a compact form of our model as follows:

$$(GPM)y = b0 + b1X1 + b2X2 + b3X3 + \ldots + \epsilon$$

Where:

Y = Dependent variable of company. X

= Independent variable of company.

b0 = Intercept for X variable of i company.

b1– b5 = Coefficient for the independent variables X of companies, denoting the nature of relationship with dependent variable Y (or parameters).

ϵi = the error term.

Specifically, when researcher converts the above general least squares model into our specified variables, it becomes:

$$(GPM)\ y = b0 + b1(ITR) + b2(DTR) + b3(CRSV) + b4(TATR) + \epsilon$$

Where:

GPM = Gross Profit Margin ITR

= Inventory Turnover Ratio DTR

= Debtors' Turnover Ratio CRSV

= Creditors' Velocity

TATR = Total Assets Turnover Ratio

8. Results and Discussions of Findings

The pharmaceuticals in the Nigerian industry involve pharmaceutics with very different sizes and business mixes as evidenced by the descriptive statistics below.

Table 1. Descriptive statistics

	Mean	Std. Deviation	N
GPM	.4319	.11435	55
ITR	4.0493	3.66928	55
DTR	14.4665	29.85534	55
CRSV	.1892	.15737	55
TATR	.7888	.29150	55

Source: Authors' SPSS output.

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The descriptive statistics shows that over the period under study, the financial ratios measured by Inventory turnover ratio (ITR), Debtors' turnover ratio (DTR), Creditors' Velocity (CRSV) and Total assets turnover ratio (TATR) have a positive mean value which ranges from 0.1892 for creditors' velocity to 14.4665 in debtors' turnover ratio. The Nigerian pharmaceutical industries are in various sizes and business mixes. The inventory turnover ratio and debtors' turnover ratio has the highest standard deviation of 3.66928 and 29.85534 respectively. This indicates that the observations in the data set are widely dispersed from the mean. It means that all the quoted pharmaceutical companies in Nigeria have inefficient inventory management in their firm. So the management should monitor their inventory in order to avoid stock-outs during the production period. This also implies that the debtors' turnover ratio provided the pharmaceutics with enable funds for the transaction because the companies collect their debts quickly from their customers. Thus, there is greater variation in the data set of inventory turnover ratio and debtors' turnover ratio because of the size differences of their business in the Nigerian pharmaceutical industry. Relationships among the study variables were tested using Pearson correlation and the outcomes are presented in table 2 below. Model specification involves the determination of dependent and explanatory variable which were included in the model and the expectations about the sign and the size of the parameters of the function, Koutsoyiannis (2003) and Onwumere (2008).

Table 2. Correlations

		GPM	ITR	DTR	CRSV	TATR
Pearson Correlation	GPM	1.000	-.308	-.231	.087	-.163
	ITR	-.308	1.000	-.117	-.107	.056
	DTR	-.231	-.117	1.000	-.252	.197
	CRSV	.087	-.107	-.252	1.000	-.374
	TATR	-.163	.056	.197	-.374	1.000
Sig. (1-tailed)	GPM	.	.011	.045	.263	.118
	ITR	.011	.	.197	.219	.343
	DTR	.045	.197	.	.031	.075
	CRSV	.263	.219	.031	.	.002
	TATR	.118	.343	.075	.002	.

Source: Authors' SPSS output. *are significant at 5%.

The correlation matrix above shows that inventory turnover ratio (ITR), debtors' turnover ratio (DTR) and total assets turnover ratio (TATR) have a weak negative relationship with profitability (GPM). The strength of their relationship is indeed at -30.8%, -23.1% and -16.3% for inventory turnover ratio, debtors' turnover ratio and total assets turnover ratio respectively. This means that the pharmaceutical industries in Nigeria have lower profitability (GPM) on their inventory, debtors' and total assets. Creditors' velocity has a positive relationship with profitability (GPM) at 8.7%. This indicates that the company is not taking advantage of any discount associated with prompt payment and this may lead to increase in their cost of sales and consequently decrease in their profit. Although, inventory turnover ratio (ITR), debtors' turnover ratio (DTR) and total assets turnover ratio (TATR) have a negative relationship with profitability, the one tailed significance level 5% shows that inventory turnover ratio and debtors' turnover ratio are statistically significant while total assets turnover ratio is statistically insignificant. This result is strengthened as p* of 0.05 >0.011, 0.045 and less than 0.118 for inventory turnover ratio (ITR), debtors' turnover ratio (DTR) and total assets turnover ratio (TATR) respectively. The creditors' velocity shows a positive relationship with profitability and also statistically insignificant at p* of $0.05 < 0.263$.

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Table 3. Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	.532	.058		9.139	.000
	ITR	-.011	.004	-.339	-2.594	.012
	DTR	-.001	.001	-.263	-1.948	.057
	CRSV	-.042	.103	-.058	-.407	.686
	TATR	-.045	.055	-.114	-.817	.418

a. Dependent Variable: GPM

The inventory has a significant relationship with profitability. The t- calculated of inventory turnover ratio (ITR) shows -2.594 which indicates that ITR has very strong and negative relationship with GPM. This significant negative relationship shows that the inventory of pharmaceutical industries in Nigeria could significantly affect the profitability of the pharmaceutical industry negatively. However, it's significance level of 0.012 shows that tc (ITR) is statistically significant. Thus, the weight of the evidence suggests that we reject H0 and accept H1 that ITR has a significant relationship with GPM of the quoted pharmaceutical industries in Nigeria. This means that a change in inventory practically have effect on Nigerian Pharmaceutical industry profitability. This is in consonance with the findings of Deloof (2003); Sayeda (2012) and Morawakage (2010). Also, Lazaridis and Tryfonidis (2006) found insignificant and negative relationship between inventory and profitability.

Moreover, this table above shows that the tc (DTR) stands at -1.948 < t* 2 confirming that it is statistically insignificant to pharmaceutical companies profitability. This indicator shows that DTR has negative relationship and do not affect the profitability of the Nigerian pharmaceutical industry. However, its significance level 0.057 renders the tc (DTR) statistically insignificant. The weight of evidence, therefore suggests that null hypothesis be accepted. This means that debtors' turnover ratio (DTR) has no significant relationship with profitability of the Nigeria pharmaceutical industry. This result is consistent with the study of Dave (2012). Also, Lazaridis and Tryfonidis (2006) found significant and negative relationship between accounts receivable and profitability.

Further, the regression coefficient and significance level table shows that t- calculated of creditors' velocity (CRSV) is -0.407. This indicates that CRSV has a negative relationship with profitability of the quoted pharmaceutical industry in Nigeria. The corresponding significance level of 0.686 clearly points out that the tc (CRSV) is statistically insignificant. Thus, the weight of the evidence suggests that we accept the null hypothesis that CRSV has no significant relationship on profitability of the Nigerian Pharmaceutical industry. A decrease on CRSV will bring an increase in the profitability by number of times the value of the t- calculated of CRSV. So, CRSV appears not to be an important determinant of profitability. Also, Dave (2012) and Lazaridis & Tryfonidis (2006) found a significant and negative relationship between creditors' velocity and profitability while Morawakage (2010) found a significant and positive relationship between creditors' turnover day and profitability.

Finally, the t- calculated of TATR, as show in table 3 is -0.817. This indicates that total turnover ratio (TATR) has a negative relationship with profitability. The corresponding significance level of 0.418 shows that it is not clearly statistically insignificant with profitability. In this case, we accept null hypothesis that states that total assets turnover ratio (TATR) has no significant relationship with Gross Profit Margin (GPM) of Nigerian Pharmaceutical industry. An increase on TATR will bring a decrease in the profitability by number of times the value of the t- calculated of TATR. Thus, Total Assets turnover ratio appears not to be important determinant of Gross Profit Margin because more than 50% were affected by other factors outside the company. This result was found out to be significant and negative relationship with profitability on Dave (2012).

So, the test outputs described below provide considerable reliability to the results and the emerging multiple regression equation is as under:

$$GPM = 0.532 - 0.011(ITR) – 0.001(DTR) – 0.042(CRSV) - 0.042(TATR) + \epsilon i$$

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Table 4. Model summary

Model	R	R^2	Adj. R^2	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.422[a]	.178	.113	.10771	.178	2.714	4	50	.040	1.099

a. Predictors: (Constant), TATR, ITR, DTR, CRSV

b. Dependent Variable: GPM

The table above shows the coefficient of multiple determinations R^2 which explains the extent to which the independent variables affect the dependent variable. In this case, 0.178 or 17.8% of the variations in the dependent variable are explained by the independent variables while 0.822 or 82.2% were affected by other variables outside the independent variables. The adjusted R-square, a more conservative way of looking at the coefficient of determination is also less than 50%. In this case, 0.113 or 11.3% of the variations in the dependent variable is not explained by the independent variable. So, this indicates that inventory turnover ratio, debtors' turnover ratio, creditors' velocity and total assets turnover ratio are not the major determining factor of gross profit margin of the selected pharmaceutical companies. Only 88.7% of the variations are determinate by other factors. Moreover, this table shows the results of correlation test, i.e Durbin - Watson statistic placed at D = 1.099. This table also shows that the results of F-test is F = 2.714 at a significance level of 0.040 with df (50,4).

9. Conclusion and Recommendation

- Inventory turnover ratio (ITR) bears a very strong and negative relationship with the profitability of the enterprise. However, the significance level has 0.012 showing that it is statistically significant so it has a significant relationship with GPM. This shows that ITR is an important factor for determining profitability on Nigerian Pharmaceutical Industry. The mean also indicates 404.93% meaning that ITR is 4.05 times over sales. The pharmaceutical industry do assign much important to inventory holdings. So it shows a sign of excessive holding of inventory in the Nigeria pharmaceutical industry.
- The debtors' turnover ratio (DTR) bears a negative relationship with the profitability of the enterprise. However, the unacceptable significance level does not allow it to be important. This points out that the corporate do not view DTR as a significant determinant of the profitability of the enterprise. The corporate do not assign much value to the credit offered to customers. Since the figure is higher the company is collecting quickly from customers and funds can then be invested for a profitability return.
- The creditors' velocity (CRSV) shows that management of creditors bears a negative relationship with Gross Profit Margin (GPM) with significance level standing at 0.686 showing statistically insignificant so the CRSV has no significant relationship with profitability. Because of this finding on creditors' velocity, the company is not taking advantage of any discount associated with prompt payment and this may lead to increase in their cost of sales and consequently decrease in their profit.
- Total Assets turnover ratio (TATR) indicates a negative relationship with Gross Profit Margin (GPM) with significance level of 0.418 showing a statistically insignificant. So it does not affect the profitability of the quoted pharmaceutical industry in Nigeria. It also shows that the company does not utilize its assets efficient in generating its income.
- The descriptive statistics shows that the inventory turnover ratio (ITR) and debtors' turnover ratio (DTR) has the highest mean of 4.0493 and 14.4665 while Standard deviation of 3.66928 and 29.85534 respectively for the selected quoted pharmaceutical industry in Nigeria. So it shows that the companies make uses of credit facilities in its trading.
- The table 4 (model summary) indicates that coefficient of multiple determinations (R^2) is 17.8% of the variations in the dependent variable are explained by the independent variables. It also shows that the independent variables are not the major determinants factor of gross profit margin of the Nigerian Pharmaceutical industry while 82.2% of the variations are determine by other factors.

Against this backdrop, the researcher recommended among others:

- That management should maintain their creditors' velocity at a zero point because neither too high nor too low is good for the company. So a creditors' velocity should be at a point where the creditors and purchases (cost of sales) are equal. In this point, the company will take the advantage of credit facility and any discount

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associated with prompt payment of goods to increase their profitability index.

- That the management of the companies should maintain a high debtors' turnover ratio because it will help the increasing their investment by reinvesting the funds collected from their customers.
- That the inventory of the company should be checked and monitored frequently by the management in order to prevent over storage or scarcity of inventories.
- That the management should utilize its assets efficient in generating more income for the company. The company should expand its business in order to make more sales and more profit.

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