The Relationship of Cost of sales (COS) and Overheads (OH) and the Net profit (bottom line): A study of a quoted Nigerian company (Evans Medicals Plc) in the Pharmaceuticals Industry

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ABSTRACT

This paper looks at the relationship of increase in cost of sales against Net profit as well as increase in Overhead against Net Profit of pharmaceutical companies in Nigeria. Using Evans Medical Plc as a case study, Eighteen (18) Years financial statement (1989-2007) was analyzed and the relationships between these variables were compared using regression analysis. It was found out that there is a linear relationship amongst these variables in pharmaceutical companies in Nigeria. This paper thereafter, suggests by way of prediction, the regression line for the variables used to enable the company predict what its net profit could be in future years of business operation as well as some factors that might affect this predictions.

Keywords: Cost of sale, Evans Medical Plc, Net Profit, Overhead, Pharmaceutical Industry and Regression Analysis.

INTRODUCTION

According to researchers, several factors could affect the net profit and the ultimate success of the business. And these factors include: overhead, cost of sales, selling price as well as governmental factors. No matter how small these factors could be, they play a significant impact on the Net profit of the business or company. It is therefore imperative to monitor these factors and know how to check them to avoid a catastrophic effect on the profitability of the company. However, for the purpose of this study, the Overhead and cost of sale factors are surveyed and its consequent relationship examined. There is a relationship between cost of sales increases (COS) against increases in Profit of Evans Medicals PLC. That is, if the company's cost of sales increases, or goes up, Profit- after taxation increases and vice versa. Similarly, if overhead costs (OHC) of company go up or increase, there is also a noticeable increase in the Profit especially profit after taxation. This was evident in the financial statements of Evans Medicals Plc analyzed during the course of this study. This relationship between cost of sales, Overhead costs and Profit is expressed as a function which is used in comparing two variables (Y and X). This function is known as Regression Function.

Brief Profile of the Company

According to the 2010 Audited Financial Report submitted to the Nigerian Stock Exchange, Evans Medical Plc was incorporated in April 1954, with the name Allen and Hanburys Nigeria Limited which was later changed to Glaxo Allenburys Nigeria Limited in 1958. The name was later changed Glaxo Nigeria Limited. In 1994 however, it became Evans Medical Plc, a direct fall out re organization of the company along Ethical and therapeutic product lines. The company was ceded all the OTC therapeutic products while the Ethical and therapeutic products were transferred to Glaxo Nigeria Limited which later became Glaxowellcome following its parent merger with Welcome overseas. The company has its factory located in Agbara, Ogun State, and its Corporate office at 6 Abimbola Way, Isolo Industrial Estate, Isolo, Lagos. It is quoted on the Nigerian Stock exchange.[1]

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[1] See attached Financial statements retrieved from Nigerian Stock Exchange at the appendix section of this report

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LITERATURE REVIEW

There are various works by several scholars on the impact of Cost of Sale and Overheads on a company's bottom line. For example, Udu and Okafor (2012:149) stressed that the gross profit is not the actual profit of a business because the operating expenses of the business has not been taken care of. However, to ascertain this, the profit and loss statement is prepared to know the net profit of the business. The net profit is determined through subtracting the operating expenses from the operating income (Udu and Okafor, 2012).

According to Luke Arthur of ehow.com, "Increasing the net profit of a business is one of the most important objectives of any company, as this tells how much money the company makes after expenses are deducted. Depending on the structure of the business, several factors could affect the net profit and the ultimate success of the business. And these factors include: overhead, cost of sales, selling price as well as governmental factors. This speaks volumes of the relationship of net profit and expenditures. Even government factors, as Luke noted is also expenditure in nature. Taxes and levies fall under this category. The net profit is easily affected by expenses.

Furthermore, this issue also fits well with what Dretler and Dennen (2012)[2] described as "Overhead consuming the greater pie of the universities". Dennen and Dretler[3] have, in their research indicated that a 20% increase in American Universities and Colleges' expenses leads to a 12% decrease in equity and that leads to a downward equity trend. They continued that the survival of American colleges and Universities depends on the check on their expenses. One way they have been doing that though is by the "Law of More". Explaining the law of more, they assert that "Much of the liquidity crisis facing higher education comes from having succumbed to the "Law of More." *Many institutions have operated on the assumption that the more they build, spend, diversify and expand, the more they will persist and prosper.* But instead, the opposite has happened: Institutions have become overleveraged. Their long-term debt is increasing at an average rate of approximately 12% per year, and their average annual interest expense is growing at almost twice the rate of their instruction-related expense. In addition to growing debt, administrative and student services costs are growing faster than instructional costs. And thus, fixed *costs and overhead consume a growing share of the pie*. However, they also argued that the law of more is not the best way to remain financially sustainable. The only way is to reverse the Law of More and create a more differentiated and financially sustainable institution, innovative college and university presidents are doing four things: 1)Developing a clear strategy, focused on the core. 2) Reducing support and administrative costs; 3) Freeing up capital in non-core assets; 4) strategically investing in innovative models.[4]

Concerning European companies, the economic times also reported that Germany's Siemens AG, is looking to narrow the profitability gap with its competitors, could detail likely disposals and the scale of planned cost cuts when it reports results this year.

The engineering conglomerate, Germany's most valuable company and a symbol of its technological prowess, said last month it needed to slash production costs and could cut jobs to compete with rivals. The scale of these cuts, which could mean significant reductions in the group's 410,000-strong global workforce, is indicative of the degree to which economic and technical trends have moved against the company in the past year - as well as the size of the efforts it needs to make to get back on track. But the group has not yet said how much money it wants to save or how many jobs may go, and some analysts believe it will need to aim for between 2 billion euros ($2.6 billion) and 4 billion in cuts over two years to close the gap with rivals such as ABB Ltd and Philips.[5]

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[2] Jeff Dennen and Tom Dretler: '' The financially sustainable university" (Bain Brief July 2012)

[3] *Jeff Denneen leads the Americas Higher Education practice for Bain & Company and is a partner in the Atlanta office. Tom Dretler is an executive in residence with Sterling Partners and is board chair and co-founder of the Alliance for Business Leadership. Their writings are found online at* http://www.bain.com/publications/articles/financially-sustainable-university.aspx (accessed on 2/12/2012):

[4] http://www.bain.com/publications/articles/financially-sustainable-university.aspx (accessed on 2/12/2012):

[5] http://articles.economictimes.indiatimes.com/2012-07-20/news/32764230_1_margins-net-profit-kirloskar-oil-engines. (Accessed on 02/12/2012).

Bakar and Tahir (2009) in their paper used multiple linear regression technique and simulated neural network techniques for predicting bank performance. Return on Asset (ROA) was used as dependent variable of bank performance and seven variables including liquidity, credit risk, and cost to Income ratio, size and concentration ratio were used as independent variables. They concluded that neural network method outperforms the multiple linear regression method however it needs clarification on the factor used and they noted that multiple linear regressions, not withstanding its limitations, can be used as a simple tool to study the linear relationship between the dependent variable and independent variables.

All these writings suggests that the issue of Net profit and Expenses (COS and OH) relationship is an issues that is receiving great attention both among scholars as well as industry practitioners. This explains the indispensability of the Net Profit in business profitability and survival. This also shows that the Net profit determination depends on the expenditure – overheads, Cost of sales etc in the business. However, to what extent these expenditures affects Net profit has not been ascertained.

OBJECTIVES AND RESEARCH METHODOLOGY

Objectives

1. To analyze the relationships between cost of sales, overheads and Net Profit of the company and demonstrate how a change in COS and OH can affect the Net Profit of Pharmaceutical companies.
2. To suggest the regression line for the variables and identify factors that can affect the variables.
3. Highlight valuable suggestions on how to control the factors as aforementioned.

RESEARCH METHODOLOGY

Research Design

The research design refers to the overall strategy that is chosen to integrate the different components of the study in a coherent and logical way, thereby, ensuring an effective addressing of the research problem; it constitutes the blueprint for the collection, measurement, and analysis of data[6]. In this study, the case method is used, and in doing this however, the correlational method is adopted, hence using regression analysis. Correlational method measures the relationship between two variables. Unlike in experimentation, the relationship is observed in a more natural environment.

Data collection method

In this study, only secondary data were used. Secondary data were collected from the Annual report based on the financial statements of the company over a twenty year period.

Sampling plan

The pharmaceutical industry in Nigeria was used as a sample of the industry.

The present study is based on the evaluation of financial statements of the pharmaceutical industry in Nigeria.

Population

Only the years of Profit according to the financial statements, were considered

RESULTS AND ANALYSIS

In order to properly investigate these relationships as stated in paragraph one, a regression analysis in carried out and quite interesting results found out. However, let us understand what the variables – Net Profit, Cost of sales, overhead cost as well as regression are.

According to Farris et al (2010), **net profit** or **net income** is "a measure of the profitability of a venture after accounting for all costs". They went further to illustrate the importance of Net Income by showing that in a survey of nearly 200 senior marketing managers, 91 percent responded that they

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[6] http://www.cliffsnotes.com/study_guide/Research-Designs-and-Methods.topicArticleId-26831,articleId-26754.html. (Accessed 22/11/2012).

found the "net profit" metric very useful. In accounting, net profit is equal to the gross profit minus overheads minus interest payable for a given time period (usually: accounting period).[7]

Furthermore, a common synonym for "net profit" when discussing financial statements (which include a balance sheet and an income statement) is *the bottom line*. This term results from the traditional appearance of an income statement which shows all allocated revenues and expenses over a specified time period with the resulting summation on the bottom line of the report. In simplistic terms, net profit is the money left over after paying all the expenses of an endeavor.[8]

In the case of Evans Medicals, and for the purpose of this analysis, its Net Income is its Profit after Taxation. It is the money left over after it has met its tax obligations. Sometimes the Net Profit is high while at other times low, and in rare cases, on the negative (see appendix for statements). However, some factors that might be responsible for this fluctuation of Net profit are enumerated at the comments analysis.

Cost of sales (COS) on the other hand, is the cost of purchasing raw materials and manufacturing finished products. Equal to the beginning inventory plus the cost of goods purchased during some period minus the ending inventory. Also called **Cost Of Goods Sold (COGS).** Whilst **Overhead Cost (OHC)** is "an accounting term that refers to all costs not including or related to direct labour, materials, or administration costs. This is a very ambiguous term unless a modifier is added. A commonly used expression is manufacturing overhead. In other words, COS can be referred to the ongoing administrative expenses of a business which cannot be attributed to any specific business activity, but are still necessary for the business to function. Examples include rent, utilities, and insurance".[9] In the case of Evans medicals Plc, the overhead cost, though not explicitly stated in its financial statements, is determined in the course of this analysis, by adding up the administration expenses and distribution expenses as the case may be. Hence total overhead costs for each financial year (as shown in the table 1 below).

Table1. *Computed values of the Net Profit and Cost of Sales and overheads of Evans Medicals Plc*

/No	Year	Net Profit (Y)	Cost of Sales (X)	Overhead (Z)
		N'000	N'000	N'000
1	1989	5,523	25,009	19,822
2	1990	7,083	42,711	38,685
3	1991	10,936	75,721	32,164
4	1992	7,454	98,973	50,423
5	1993	12,146	148,536	71,918
6	1994	5,562	244,512	111,016
7	1995	65,080	377,548	244,646
8	1996	48,672	293,017	225,469
9	1997	9,166	425,964	227,922
10	2000	48,064	405,309	244,052
11	2001	60,122	459,053	327,138
12	2002	97,953	558,500	421,938
13	2003	77,641	801,076	515,512
14	2004	46,652	529,247	405,338
15	2005	14,223	536,279	449,166
16	2006	86,716	848,747	817,517
17	2007	85,714	1,060,889	902,489
18	2010	169,846	1,392,783	1,009,981
Total		**858,553**	**8,323,874**	**6,115,196**

Source: *Financial statement of Evans Medical Plc (see appendix)*

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[7] *Farris, Paul W.; Neil T. Bendle; Phillip E. Pfeifer; David J. Reibstein (2010). Marketing Metrics: The Definitive Guide to Measuring Marketing Performance. Upper Saddle River, New Jersey: Pearson Education, Inc*

[8] http://en.wikipedia.org/wiki/Net_profit/ (Accessed on 26/06/2012).

[9] http://www.investorwords.com/3259/net_profit.html#ixzz1yv1Dr0Gp (Accessed on 26/06/2012)

Simple Regression analysis was used to analyze these variables in other to predict changes and relationships. Regression is "*a technique used to discover a mathematical relationship between two variables using a set of individual data points.* Regression analysis on its own is "*A statistical technique used to find relationships between variables for the purpose of predicting future value* (www.investorwords.com). Regression equation, which represents the function is "*a statistical technique used to explain or predict the behaviour of a dependent variable".* Generally, a regression equation takes the form of **Y=a+bx+c,** where Y is the dependent variable that the equation tries to predict, X is the independent variable that is being used to predict Y, a is the Y-intercept of the line, and c is a value called the regression residual.

The values of a and b are selected so that the square of the regression residuals is minimized.[10]

Again, in this analysis, Y = (Independent Variable) Profit after taxation; X (Dependent Variable) = Cost of Sales; b = variable cost/ unit whilst a = Constant factor.

In other words, a and b serve as the Y – intercept and slope respectively, of the line of which all the profit means are assumed to lie. (Nwachukwu, 2008).

A graph of Net profit and Cost of sales of the company is plotted and it shows a linear regression relationship between cost of sales and net profit: (See Graph 1 below)
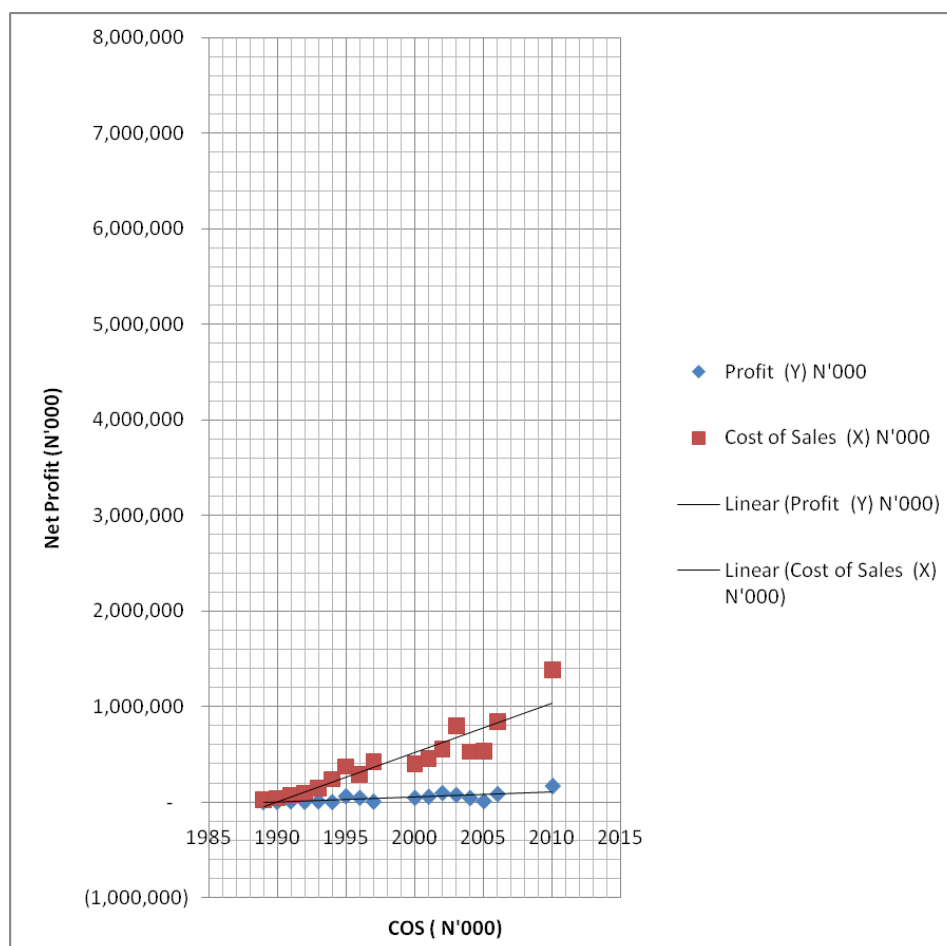
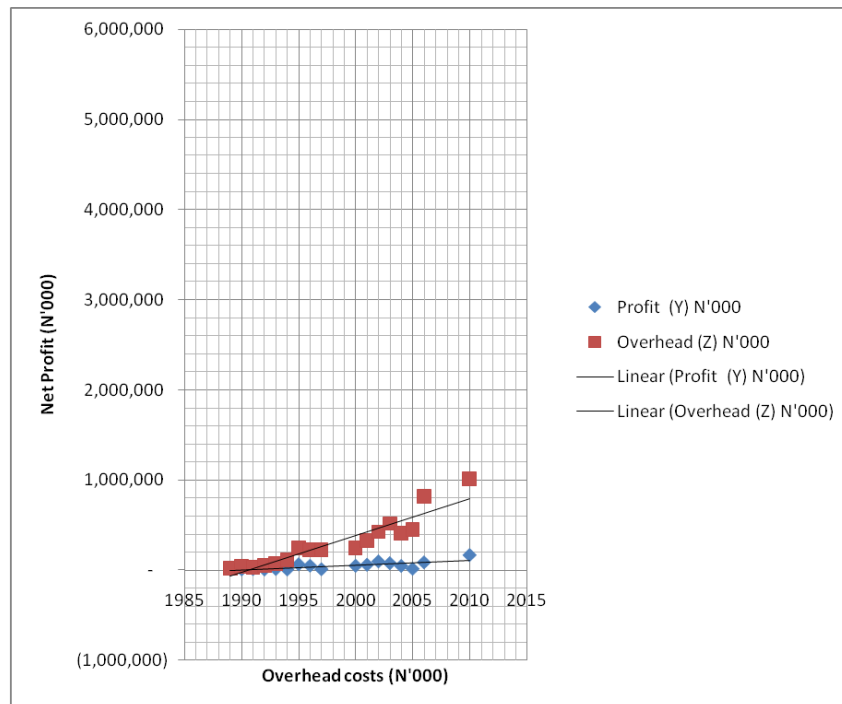**Graph1:** *Showing the linear relationship of Net profit and Cost of Sales for Evans medical Plc.*

Similarly, in second relationship determination, Y= Profit (Independent variable); Z (dependent variable) = Overhead costs; b = costs/unit and a= constant factor respectively. (See Table 1).

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[10] http://www.investorwords.com/4137/regression_equation.html#ixzz1yv5VttMh. (Accessed on 26/06/2012)

Graph 2 here also shows the relationship of the variable Overhead and Net profit as well as their linearity:

Graph2. *Showing the Linear relationship of Net Profit and Overheads for Evans Medicals Plc*

From the graphs above, (Graph1 and Graph 2) it shows that when Cost of sales of the company goes up, the net profit also increase, and when Overhead goes up, the Net profit also go up. This relationship shows that Cost of sales and Overheads cause the Profit to change, bearing in mind that the profit is the Independent variable as mentioned earlier.
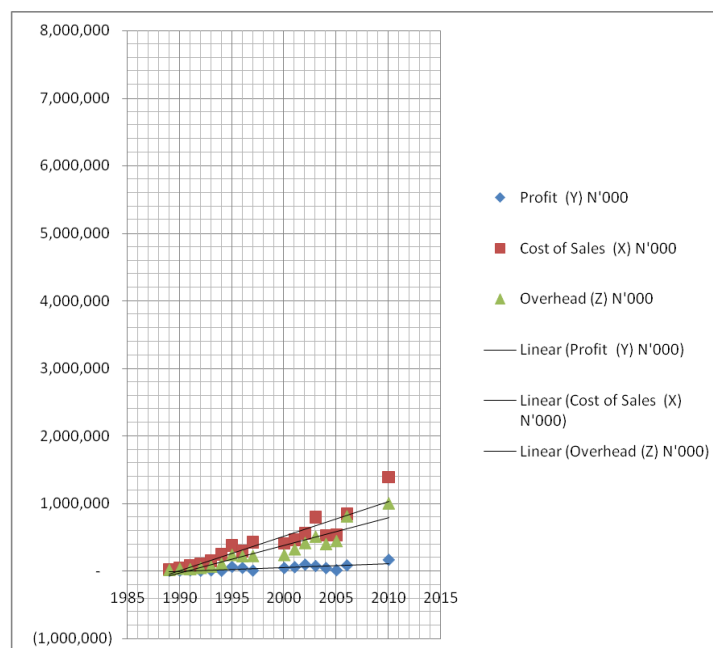
Graph3: *Showing the combined Linear relationship of Net profit, Cost of sales and Overheads for Evans Medical Plc*

Having plotted the graphs however, the estimation of the regression is made or calculated as well as the regression equation applied. There are two methods of estimating the regression line for a linear relationship. They are the "eye fitted method" (Free hand method) and the Least squares method. The former takes its drawing of the line based on individual judgment of which one thinks of the lines that

are closest to each other whilst the latter eliminates the human judgment inherent in the free hand method and gives one line only which is the line of best fit.[11]

For this analysis however, the Least square method is used in other to get a clearer and a reasonably precise relationship. As earlier stated, the regression function is:

$Y = a+bx$, where, Y = Independent variable (in this analysis, is Net Profit), a = Y intercept and

b = slope of the graph, while X = dependent variable (Cost of sales).

It will be of interest to note that, a (the intercept) shows the value of Y (Net profit) when X is zero; while b (slope) shows how much Y is increased (or decreased) per unit increase in X. A positive value of b indicates that X (cost of sales) or (overheads) increases as Y (Net profit) also increases, while a negative value of b shows that Y (Net profit) decreases as X increases.

$Y = a+bx$.

But $b = n\Sigma xy - \Sigma x\Sigma y / n\Sigma X2 - (\Sigma X)^2$, $a = \bar{y} - b\ddot{X}$; where ($\bar{y}$ and $\ddot{X}$) are mean of Y (Net profit) and Mean of X cost of sales and Overheads respectively).

To be able to calculate b, a table of distribution is required and this is prepared below of which values are extracted for the above formula: Substituting the values from the table below for the formula **$b = n\Sigma xy - \Sigma x\Sigma y / n\Sigma X^2 - (\Sigma X)^2$. b = 0.047** approximately.

With $a = \bar{y} - b\ddot{X}$,from the table below, Mean of Profit ($\bar{y}$) = 45, 461; and mean of cost of sales ($\ddot{X}$) = 427, 234. Therefore, $b(\ddot{X}) = 0.047 \times 427,234 = 20079.998$. $a = 45,461 - 20079.998$.

$a = 25381.002$ (Cost of sales against Profit slope).

INTERPRETATION OF RESULTS: This means that **a (N25, 381.2 Million),** will be the Net profit for the company assuming a zero cost of sales for that year. Also for $b = 0.047$ shows that the Net profit of Evans Medicals Plc will have a 0.047 increase per unit increase in its Cost of sales.

Summary of Net profit, Cost of sales and Overheads distribution for Evans Medicals Plc

S/No	Years	Profit (Y)	Cost of Sale (X)	Overheads (Z)	Mean (Y)	Mean (X)	Mean (Z)
		N'000	N'000	N'000	N'000	N'000	N'000
1	1989	5,523	25,009	19,822	47,697	462,437	339,733
2	1990	7,083	42,711	38,685	47,697	462,437	339,733
3	1991	10,936	75,721	32,164	47,697	462,437	339,733
4	1992	7,454	98,973	50,423	47,697	462,437	339,733
5	1993	12,146	148,536	71,918	47,697	462,437	339,733
6	1994	5,562	244,512	111,016	47,697	462,437	339,733
7	1995	65,080	377,548	244,646	47,697	462,437	339,733
8	1996	48,672	293,017	225,469	47,697	462,437	339,733
9	1997	9,166	425,964	227,922	47,697	462,437	339,733
10	2000	48,064	405,309	244,052	47,697	462,437	339,733
11	2001	60,122	459,053	327,138	47,697	462,437	339,733
12	2002	97,953	558,500	421,938	47,697	462,437	339,733
13	2003	77,641	801,076	515,512	47,697	462,437	339,733
14	2004	46,652	529,247	405,338	47,697	462,437	339,733
15	2005	14,223	536,279	449,166	47,697	462,437	339,733
16	2006	86,716	848,747	817,517	47,697	462,437	339,733
17	2007	85,714	1,060,889	902,489	47,697	462,437	339,733
18	2010	169,846	1,392,783	1,009,981	47,697	462,437	339,733
	Total	**858,553**	**8,323,874**	**6,115,196**			

Summary of Net profit, Cost of sales and Overheads distribution for Evans Medicals Plc Cont'd

(X)(Y)	(Y)(Z)	(X)^2	(Z)^2
N'000	N'000	N'000	N'000
138,124,707	109,476,906	625,450,081	392,911,684
302,522,013	274,005,855	1,824,229,521	1,496,529,225

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[11] Nwachukwu, Vitalis O. (2005), *Principles of Statistical Inference,* 3rd Edition. Pgs 206-214

828,084,856	351,745,504	5,733,669,841	1,034,522,896
737,744,742	375,853,042	9,795,654,729	2,542,478,929
1,804,118,256	873,516,028	22,062,943,296	5,172,198,724
1,359,975,744	617,470,992	59,786,118,144	12,324,552,256
24,570,823,840	15,921,561,680	142,542,492,304	59,851,665,316
14,261,723,424	10,974,027,168	85,858,962,289	50,836,269,961
3,904,386,024	2,089,133,052	181,445,329,296	51,948,438,084
19,480,771,776	11,730,115,328	164,275,385,481	59,561,378,704
27,599,184,466	19,668,190,836	210,729,656,809	107,019,271,044
54,706,750,500	41,330,092,914	311,922,250,000	178,031,675,844
62,196,341,716	40,024,867,192	641,722,757,776	265,752,622,144
24,690,431,044	18,909,828,376	280,102,387,009	164,298,894,244
7,627,496,217	6,388,488,018	287,595,165,841	201,750,095,556
73,599,944,852	70,891,804,172	720,371,470,009	668,334,045,289
90,933,039,746	77,355,942,146	1,125,485,470,321	814,486,395,121
236,558,621,418	171,541,232,926	1,939,844,485,089	1,020,061,620,361
645,300,085,341	**489,427,352,135**	**6,191,723,877,836**	**3,664,895,565,382**

Similarly, for Profit against the variable overheads (Z) regression line $Y = a+bz$. But $b = n\Sigma ZY - \Sigma Z\Sigma Y/n\Sigma Z2 - (\Sigma Z)^2$, $a = \bar{y} - bz$; where ($\bar{y}$ and z) are mean of Y (Net profit) and Mean of Z Overheads cost respectively).

Substituting and solving for b from the tables above, **b = 1.0653,**

Hence, a = mean of net profit $\bar{y}$ - bz. = a = 45,461 – (1.0653x 306,630) = 326652.939

a = 45461-326652.939 = -281191.939 (Slope for Overhead against profit).

INTERPRETATION OF RESULTS

This result also shows that **a (N 281,191.9 Million)** will be the Net profit for the company assuming a zero overheads for that year. Also for **(b = 1.0653)** shows that the Net profit of Evans Medical plc will have a **1.0653** increase per unit increase in its overhead costs.

Note: From the computations above, for Net Profit and cost of sales relationship, the functions is represented as thus:

$Y = 25381.002 + 0.047X$ is the required estimate of the regression line. This function can be used to predict a profit for the year for a given cost of sale.

For example, for a cost of sales of N15million in 1988, the estimated profit would be: $Y = 25381.002 + 0.047(15) = $ **N25, 381.707 Million**.

Similarly, for the Net profit and overhead relationship, the function will look like this:

$Y = -281191.939 + 1.0653Z$. and to predict a relationship say Net profit of year 1988 whose overhead is N17,500m, it would be $Y = -281191.939 + 1.0653(17,500) = 549,174.9336$,

hence **Y = N262,549.19m**

CONCLUDING COMMENTS ON FINDINGS

These relationships as computed show that there is a linear relationship between Net profit of Evans medicals Plc and its costs – of sales and overheads. When there is an increase in cost of sales and overheads, with a correspondent increase in sales or turnover, Net profit will increase and vice versa. According to the financial statements (see appendix), between 1989 and 2010 – the year under review, the company's net profit maintained a fluctuating trend of up and down movement except in 1997 through 2002, where it witnessed an amazing year on year increase ranging from N9, 166million in 1997 to N48, 064 million in 2000, N60, 122million in 2001 and N97, 953million in 2002 respectively. Thereafter, it fluctuated downwards again falling from N77, 641 million in 2003 to a meager N14, 233million in 2005.

In 2006 however, the net profit soared again to a record N86, 716million and to a peak of N169, 846million in 2010.

Similarly, the cost of sales and overheads of the company maintained an upward trend (except in 1996 for cost of sales, and 1997 through 2000 for overheads), ranging from N25,009million and N19,822 respectively in 1989 to N405,309million and N244,052 million respectively in 2000. It will be of interest to note however, that the acceleration of Net profit witnessed in 2006 could be as a result of factors such as increased turnover, improved costs control mechanisms as well as other investments. This hence reflected in increased profits with corresponding increased cost of sales and overheads seen in 2010 (i.e. N169, 846million net profit; N1, 392,783million cost of sales and N1, 009,981million overheads).

The total percentage changes for the Net profit for the years in review was 2,113 percent whilst 1,320 percent and 1,323 percent were for the cost of sales and overheads respectively indicating a close rate of change between cost of sales and overheads of the company. (See Table 3 below). In addition, the average percentage changes in Profit was 124.29% indicating that profit has doubled from the beginning to the end of the year under review. However, the average total cost of sales and overheads have not doubled as they stood at 77.64% and 77.83% respectively.

Table3. *showing the Variables and their annual percentage changes*

S/No	Year	Profit (Y)	% Change	Cost of Sales(X)	% change	Overhead (Z)	% Change
		N'000		N'000		N'000	
1	1989	5,523	78	25,009	59	19,822	51
2	1990	7,083	65	42,711	56	38,685	120
3	1991	10,936	147	75,721	77	32,164	64
4	1992	7,454	61	98,973	67	50,423	70
5	1993	12,146	218	148,536	61	71,918	65
6	1994	5,562	9	244,512	65	111,016	45
7	1995	65,080	134	377,548	129	244,646	109
8	1996	48,672	531	293,017	69	225,469	99
9	1997	9,166	19	425,964	105	227,922	93
10	2000	48,064	80	405,309	88	244,052	75
11	2001	60,122	61	459,053	82	327,138	78
12	2002	97,953	126	558,500	70	421,938	82
13	2003	77,641	166	801,076	151	515,512	127
14	2004	46,652	328	529,247	99	405,338	90
15	2005	14,223	16	536,279	63	449,166	55
16	2006	86,716	51	848,747	61	817,517	81
17	2007	85,714	10	1,060,889	13	902,489	15
18	2010	169,846	20	1,392,783	17	1,009,981	17
Total		**858,553**	**2,121**	**8,323,874**	**1,330**	**6,115,196**	**1,335**
Average % changes:			**117.82**		**73.90**		**74.16**

(Computed from the Annual Financial statements. See Appendix)

CONCLUSION

Finally, it is also noticeable that in the year 1997, there was a relatively increase in cost of sale and overheads from the previous years without a corresponding increase in Net profit as witnessed before. This could be as a result of some factors. This abnormality can probably be attributed to **low turnover**, **increased debtors – from sales of products**, and **low or non implementation of adequate cost controls**. All these resulted in low Net profit of N9, 166million. If these factors are controlled however, net profit is likely to increase as depicts in this study based on the relationships that exist.

Furthermore, the company witnessed a consistent negative (Loss) net profit from 2008 – 2009 (See appendix). However, in this analysis, these were not shown in the tables as the years of profit alone were selected in order to properly determine the required profit function and its relationships. The recurrent losses (N87, 836million in 2008 and N115, 209million in 2009) could also be attributable to very high overhead costs without a corresponding turnover as well as other factors. The good news

however, is, the company bounced back from the loss position to a positive position in 2010 and it is hoped that it will continue in this trend.

LIMITATION OF THE STUDY

This study emphasized on the company in the pharmaceutical Industries for which data were available.

FUTURE AREAS OF INTENSIVE RESEARCH

1. The relationship between company tax and net profit

2. The relationship between Cost of sales, overheads and Net profit of other companies in another industry, apart from pharmaceutical company

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